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MODERN ART EDUCATION:

ITS PRACTICAL AND ÆSTHETIC CHARACTER EDUCATIONALLY CONSIDERED.

BY

PROFESSOR JOSEPH LANGL,
OF VIENNA.

BEING PART OF THE AUSTRIAN OFFICIAL REPORT ON THE VIENNA WORLD'S FAIR OF 1873.

154

TRANSLATED WITH NOTE BY

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WITH AN INTRODUCTION BY CHARLES B. STETSON.

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AMERICAN PREFACE.

At last on this side of the Atlantic an earnest, wide-spread activity in behalf of popular art-education is beginning to manifest itself, not only among educators, but among business men, distinguished for the interest they take in the development of American industry. As to the character of this activity, different opinions prevail. Some believe it is a mere educational spasm which will soon pass away; others that it is only the beginning of what we are to see, — of a new era in education. That the latter are right, that this new-born activity is justified by enduring considerations of educational and industrial policy, a survey of the more conspicuous facts will make evident enough. This survey must embrace not only the field at home, but the foreign as well.

AN AGE OF INDUSTRIAL CONFLICT.

While no one can say that the time approaches when Europe will cease to "tremble under the drums and tramplings" of martial hosts, yet it is very clear that she is now to behold a long age of industrial conflicts among the leading nations, with issues quite as momentous as any that were decided at Waterloo or Sedan. This age has fairly set in, as a glance at the past, by way of comparison, will show.

At the beginning of the present century, it was the well-drilled soldier upon whom the different nations of Europe relied for defence: the well-trained workman counted for little. To be sure, Napoleon, when first consul, recognizing the vital importance of industrial education, took vigorous measures to promote it in

France. But education is a plant whose fruit does not mature in a year, nor all at once: a half century was required fully to convince Europe, by results, that the workman should be specially educated for his work. Meantime America was developing the public school as a means of popular culture. To-day Europe is successfully combining the two lessons, — industrial instruction, and general culture, of the whole people. The different governments realize that henceforth national supremacy must depend more and more upon industrial supremacy; and so for this peaceful warfare, not the less real because bloodless, each is arming itself with the best weapons that art and science can furnish. In the camp soldiers are drilled no less than of old; but, in the schools, children and youth are trained with a direct view to labor as they never were trained before. Of all things, the pencil is recognized as the most efficient ally of the needle-gun. While the latter wins victories on the field of carnage, the former wins them in great industrial tournaments that bring together the rival products of the whole working world. In the one case it is a battle of bullets, in the other a battle of forms; and Europe has learned that provision should be made no less against defeat in the battle of forms than in the battle of bullets.

While America, as yet, has done almost nothing for the direct education of labor, how munificent the expenditures made for this purpose by European governments! how broad their view, and how thoughtful the adaptation of means to secure the end desired! They rely upon no one thing; but, beginning the work in elementary schools where all can be reached, they carry it on through evening schools, through Sunday schools, through schools for special industries, even in towns of one or two thousand inhabitants, through schools of arts and trades at frequent intervals; they advance it by popular lectures, by local museums, and by oft-occurring exhibitions; they complete it in great central technical universities and art museums, with their numerous and comprehensive courses. Thus they provide for all ranks in life, for all the exigencies of art and of industry. To-day, in the workshops and manufacturing establishments of Europe, there are *millions of men and women* who have been trained more or less efficiently, during the last twenty years, in art and science

applied to industry. Is not this a noteworthy change of public policy on the part of European governments?

Let us briefly consider, yet with something of detail, what the leading European nations have done and are doing for the advancement of the art-industrial education of their people.

ART-INDUSTRIAL EDUCATION IN ENGLAND.

For this new conflict England is, with the utmost deliberation, thoroughly arming herself. At first she began with half measures, which need not here be further described than by saying that she undertook to educate her workmen only *after* they became workmen, and gave little thought to artistic qualities, relying upon cheap production, good material, and honest workmanship, to find a profitable market for her manufactures. She was the first to challenge the world to a comparison of industrial products, and in 1851 held the first Universal Exhibition at London. The result every one knows. As to products involving taste, that which adds so much to market value, she found herself far below her European rivals, and above the United States alone. Profiting by her unexpected and humiliating defeat, she at once abandoned her old educational policy, which was based mainly upon the let-alone principle, and went vigorously at work in the faith that instruction in art, as applied to industry, could be reduced to rational methods, could be treated according to recognized educational principles, and so need not longer be left to the fancy of each individual, nor to the blind caprice of the hour. There was formed in the Privy Council a new section, under the name of "Science and Art Department," which has, for its special object, the popular dissemination of a knowledge of science and art as applied to industry. Thus far the department has more especially devoted itself to the advancement of drawing and the arts of design. In 1852 the South Kensington Museum, which receives an annual grant from the government of about five hundred thousand dollars, was founded in London at an original cost of some six millions of dollars. Besides giving general instruction in fine and industrial art, and sending out numerous travelling collections of art objects for local service, this school provides special training, free of cost, to those whom the government

selects as the most promising candidates for art-masters, and who, upon finishing the course, are expected to take charge of art-schools in different parts of the kingdom. Thus the South Kensington Museum is the great centre of art-instruction for the whole kingdom; but it is only the centre. The educational influence of the government is felt everywhere; and, in all important industrial towns, art-schools for instruction in drawing, modelling, and design have also been established. These schools, under the supervision of the Science and Art Department, are sustained in part by the government, in part by the local authorities, in part by fees; it being the principal object to improve the local manufactures by making them more artistic, and to promote machine and building construction. They continue to increase from year to year. According to the official report for 1872, they numbered 122,[1] and were attended by 22,845 students; to whom add the 765 students who attended the National Art Training School at South Kensington. Thus for every 210,000 of the population, there was one well-appointed art-school, wholly devoted to art-instruction, with an average of 190 students. There was also a large number of science schools in which drawing was taught, 69 submitting papers for payments and prizes. Of night classes for giving instruction in drawing to artisans, and to youth more than twelve years old, there were 538, with an attendance amounting to 17,256. Then it is not to be overlooked, that drawing forms an important part of the instruction given in elementary schools, both public and private. Thus, in the "schools for the poor" alone, 194,549 children were instructed in drawing, the same year, 1872. And so a more or less efficient knowledge of art, as applied to industry, is rapidly spreading among all the industrial classes of Great Britain.

The advocates of popular instruction in science as applied to industry, seeing the great success which has attended the efforts in favor of art, are strenuously urging the government to treat science in the same systematic and liberal manner. The vast things they contemplate are minutely described by E. Twining, in his book on "Technical Training," and by J. Scott Russell, in his book entitled "Systematic Technical Education for the Eng-

[1] See note, p. 125.

lish People." That the advocates of popular scientific education will, at an early day, obtain what they desire, cannot well be doubted.[1] Then, with a full development of the public school system established in 1870, the educational equipment of England will be complete and exceedingly efficient.

ART-INDUSTRIAL EDUCATION IN FRANCE.

First fruits of systematic English art-education soon began to manifest themselves. At the Universal Exhibition, held at London in 1862, the advancement in English art-manufactures, since 1851, was clearly shown; and the French, ever sensitively alive to their industrial interests, took alarm. Such great results so soon achieved, what might not be expected in the future! France saw, indeed, that it was not safe to rely upon prestige, however distinguished: she saw that to stand still was to go to the rear; she saw that to maintain her position, so long indisputably held, at the head in art-manufactures, she must advance. The next year the Emperor appointed a large and able commission, which was divided into sections, to investigate the subject of technical education in general, and of art-industrial education in particular. In 1865 this commission submitted an elaborate report, showing what the situation was at home and in all parts of Europe. They declared that "*drawing, with all its applications to the different industrial arts, should be considered as the principal means to be employed in technical instruction.*" They made sundry recommendations for the advancement of art-education, of drawing in particular, which they believed should be made more scientific, more uniform, and more general, if France was to retain her industrial supremacy. They would have less of individual caprice, and more teaching in harmony with sound and fixed educational principles. The government proceeded at once to act upon the advice of the commission; and the art-instruction of France, which had so long been the best in Europe for industrial purposes, was in various points reconstructed and made better still. Steps were taken to provide better teachers, better appointed school-

[1] In 1873 the total number of "science classes," under the supervision of the Science and Art Department, was 3,816, in 1,238 schools. Number of students, 44,012. But the work is not systematically done yet.

rooms, better models and drawing-copies. The co-operation of publishers was secured; for they soon saw that they must furnish better drawing-copies, otherwise their publications would be excluded from the schools. To impart a degree of uniformity to instruction everywhere, especially in the matter of style, the government used its influence to introduce into all the leading art-schools of the country a set of large drawing-plates, two hundred in all, costing eight francs each. But so various are the schools in France — some public, some private, some half-and-half, some general, some special — for the education of the people, that the government is obliged to resort to various means, direct and indirect, to bring about any general educational reform. One of the main objects of the Universal Exhibition held at Paris, in 1867 was to stimulate and unify the art-industrial education of France. Since the disastrous war with Prussia, educational problems — general, industrial, and military — have received more solicitous consideration than ever before at the hands of the French authorities, both national and local. Indeed, with French education of all kinds, the present is a reconstructive period, — a fact that appears to be overlooked by those who so vehemently urge us to imitate the art-instruction which has hitherto prevailed in France. However well this art-instruction may have served its purpose in the past, France herself, by attempting many decided changes, acknowledges that it is unequal to the present demands,— that, in competing with thorough instruction based upon Art-science, her traditional methods cannot stand.

ART-INDUSTRIAL EDUCATION IN GERMANY.

Germany shows that she, too, feels the impulse in favor of art-industrial education; her activity, however, would have doubtless been more marked but for the military exigencies of the last fifteen years. With German unity secured under the leadership of Prussia, it is probable that the development of industry by educational means will henceforth receive much greater attention. But, in the past, art-industrial education has not been by any means neglected. Not only in all the larger towns of the different states, as in Nuremberg, Münich, Berlin, have there long been liberal provisions for the special training of art-workmen,

but there have been similar provisions, oftentimes quite ample, in many of the smaller towns, — even in towns of one or two thousand inhabitants. Now comes a fresh impulse, and things old are taking on a new face. The late war taught France a valuable lesson; and from France, defeated and prostrate, yet promptly paying her forfeited milliards, Prussia also learned a lesson, and means to profit by it, — the lesson that art-industrial education contributes to the prosperity and grandeur of nations. "Immediately after the war with France," as Prof. Langl says, "the authorities of the various industrial towns of Prussia were called upon, in a circular issued by the Ministry of Commerce and Industry, *to follow the example of France in the organization of Drawing and Industrial Schools; and their attention was directed to the industrial importance of these schools, and to the fact that they form the true basis of the wealth of France.* Regulations in regard to teachers of freehand drawing and modelling in the industrial schools were prepared at the same time." As Germany is divided into different States, with different educational authorities more or less independent, the reform in art-education will not make the same uniform progress everywhere; nevertheless, one may rest assured that the reform from the primary school to the university, both in its practical and in its culture aspects, will be speedily effected, and with the habitual German thoroughness.

ART-INDUSTRIAL EDUCATION IN AUSTRIA.

The movement in favor of art-industrial education has not only extended to Austria, but is more marked than anywhere else. Indeed, Austria is the most thorough educational reformer in Europe to-day. Since her defeat by the Prussian at Sadowa, in 1866, she has devoted herself to the education of her people, fully resolved to win back, by the achievements of her educated industry, all she lost on the field of battle. Her schools for the education of the great body of the people, which were pronounced by Horace Mann to be among the very poorest in Europe thirty years ago, are to-day pronounced by excellent educational authority (John D. Philbrick) to be the best, — best in their organization, best in their course of study, and best in the character of their

instruction. Nothing has been done at hazard; but the whole of this remarkable educational reform is based upon the soundest educational philosophy, and so must yield good results for generations to come. The art-industrial features are very conspicuous, as will be seen upon reading the report which follows.

It may justly be said that the chief object of the Universal Exhibition, held at Vienna in 1873, was to stimulate the Austrians, educationally, by showing them what is done elsewhere for industrial education, and the result as illustrated by industrial products. At this exhibition the educational display was the largest and best ever seen, and so was of special service to educators. Already the good influence of the exhibition on the public taste has begun to manifest itself, as the Austrian minister at Washington most emphatically testifies in a recent address.[1]

[1] At the meeting of school superintendents, recently held in Washington, the Austrian Minister, Baron von Scharz-Senborn, was present, and spoke of the educational advantages and influences of expositions: —

"You remember, gentlemen, there was an old European general by the name of Montecuculi, who said, that if you are preparing for war, and wish to become victors, you must have three necessary things: first, money; secondly, more money; thirdly, much more money. Now, I think every teacher is a general; that is, he is a combatant of ignorance and of superficiality. Now, I think that the want of knowledge is the root of all evils that exist in the world, and that they can only be successfully combated by three things. These three things are, first, education; secondly, more education; thirdly, much more education. I think, too, that the education of a people must begin in the family circle, and that then every man, every woman, every village, municipality, and corporation, and every State government, and the general government itself, must aid and contribute to the accomplishment of this vitally important object. . . .

"A great German savant, Prof. Virchow, made a very interesting and a very accurate remark, which could apply here. He said that 'nothing which comes through your eyes into your head ever goes out.' And so say I. The impressions which we obtain by the sense of sight affect the brain, and change our views, in the most favorable manner. That was the meaning; and the man who has seen many things, who has travelled a great deal, will have his intellectual faculties greatly improved. We observed in Austria, as well as in other parts of Europe, another striking effect of these exhibitions. They improve, in a remarkable way, the public taste. The taste in former times in Austria was also a bad one. The people had not seen examples of tasteful and beautiful productions: they had, therefore, no artistic judgment. They had no museums and schools for applying fine arts to industry, for improving and correcting their taste, and for thus giving them the right ideas of the beautiful. The consequence was, that in their buildings, furniture, and other

ART-INDUSTRIAL EDUCATION ELSEWHERE.

But the movement in favor of art-industrial education is by no means limited to England, France, Germany, and Austria; it pervades all Europe, — the small states as well as the large. Even Russia forms no exception; within the last eleven years she has established various art-schools modelled after the English, and it is said that they have "greatly stimulated and improved the national taste."[1] There is, indeed, but one opinion throughout Europe as to the importance of art-industrial education, and as to the wisdom of making it universal. In this connection it is well to note that the methods adopted by England for promoting this education are generally imitated. Even France, so long the leader of the world in matters of art, has of late been taking lessons of her neighbor across the channel.

GREAT RELATIVE INCREASE OF THE MANUFACTURING POPULATION.

This decided change in the aspect of affairs is not due to caprice, but to universal and abiding influences which fully justify

things of common life, no taste was shown. But now, within a few years, and especially since the Universal Exposition, and the establishment of museums and schools, there has been a remarkable improvement.

"Allow me to say, gentlemen, that a sincere friend should speak the truth; and that as a sincere friend of America, who has the greatest sympathy for its people, in whose country I have learned, since my short stay of six months, a great deal, and where I hope to learn much more, — it is my duty to say to them, in all truth and candor, that their public taste is in the same awful condition as was the public taste in England before their great exhibition of 1851."

[1] In 1872, Prof. T. C. Archer, of the Edinburgh Museum of Science and Art, attended the Polytechnic Exhibition held at Moscow; and, from his report to the English Science and Art Department of the Committee of Council on Education, the following paragraph is taken: —

"Group No. 16 may be represented as a manufactory of ornamental plate in silver and silver gilt. Besides a splendid display in what may be termed the show-room, there are two very roomy and well fitted up workshops, in which the artisans may be seen working in the richly wrought and characteristic Slavonic designs, which are so notable in the plate produced in Moscow by the great firms of gold and silver smiths. The schools of art established about eight years ago, on the model of those at South Kensington, have, under the direction of Mr. Bowtoffski, greatly stimulated and improved the national taste, and have especially led it to accept the pure Slavonic models, of which the imperial treasury in the Kremlin contains such an abundance of the best examples."

all that European governments are doing for the education of artisans. Science and machinery, to take an illustration, have already greatly diminished, and will continue to diminish, the comparative number of persons required to supply those things, in way of food, raiment, and shelter, which we must have in order to exist at all.[1] What follows? The comparative number of persons employed in the production of objects calculated to make existence more tolerable, and to embellish life, not only has greatly increased within the last fifty years, but must continue to increase. Therefore it is that everywhere we find the town and city, or artisan and commercial, population gaining upon the country population. Whether we like it or not, such is the fact; and there is nothing to reverse this tendency of modern civilization except to prohibit the employment of science and labor-saving machinery in the cultivation of the soil. Make it tenfold more difficult to produce the staple articles of food, and you will at once empty the cities, putting an end to manufactures, to trade and transportation. But the change is all in the opposite direction, except so far as ignorant tillage impoverishes the soil; hence manufactures, especially artistic manufactures, together with trade and

[1] "What is yet to be accomplished in the way of increasing the proportion of product to manual labor, time alone can show; but there is no evidence at present to indicate that we are approaching any limitation to further progress in this direction. A writer in "The London Economist," in 1873, evidently most conversant with his subject, claimed that the industry of the population of Great Britain at that time, taking man for man, was nearly twice as productive as it was in 1850; and I do not think any one can review the industrial experience of the United States, as a whole, since 1860, and not feel satisfied that our average gain to the power of production during that time, and in spite of the war, has not been less than from fifteen to twenty per cent. And, if this statement should seem to any to be exaggerated, it is well to call to mind that it is mainly within the last fifteen years that the very great improvements in machinery adapted to agriculture have come into general use; that whereas, a few years ago, men on the great plains of the West cut grain with the cradle and sickle, toiling from early morn to dewy eve, in the hottest period of the year, the same work may be done now almost as a matter of recreation, — the director of a mechanical reaper entering the field behind a pair of horses, with gloves on his hands and an umbrella over his head, and in this style finishing the work in one-tenth of the time which twenty men would formerly have required, and in a manner much more satisfactory." — *From an address by David A. Wells, before the American Social Science Association, at Detroit, May* 11, 1875.

commerce so largely dependent upon these, are daily assuming greater relative importance in the economy of the world. Surely, then, each country should strive to secure the largest possible share of those industries which are growing most rapidly in relative importance, since her aggregate population and wealth will be thereby increased, and consequently her political influence in the councils of the world. Said Adam Smith long ago, "The most opulent nations generally excel all their neighbors in agriculture as well as in manufactures; but they are eminently more distinguished by their superiority in the latter than in the former." Thrifty manufactures give thrifty agriculture, at all times and everywhere.

MANUFACTURES OF MOST WORTH.

This point settled, — the great relative increase of the manufacturing population, — let us next consider the class of manufactures which are the most desirable; that is, the class which will give, 1, the largest returns for the time and labor bestowed upon them, and, 2, the best population. To designate them in a body, they are the manufactures which call for the most skill and taste on the part of the workman, and also are usually the ones whose value is the least dependent on the cost of the raw material. This is true the world over. Especially is it well, in the present connection, to remember that there is hardly any limit to the market value taste can confer upon an object through beauty of form or of decoration, however inexpensive the material of which the object is made. Hence art-manufactures are in the highest degree desirable.

Manufactures involving skill and taste are more desirable than rude ones, because, in the first place, they command a higher price in the market, if we regard only the time and labor bestowed upon them. Brawn against brain in any field of labor never did successfully sustain itself. What can be done by a machine, or by an animal, that is, by mere brute strength, we never esteem as we do work that can be done only by the mind. While, therefore, the rude laborer earns his dollar, the dexterous laborer earns two, and the skilled laborer three. Yet it costs just as much to support in health and comfort the rude laborer as it does the one who is skilful and artistic.

In the second place, rude manufactures not only have the preference of the consumer against them, but transportation also puts them at a disadvantage. Every one must pay for getting whatever he produces to market; and the real market in which he sells is the place whence come the products he receives, directly or indirectly, in exchange for his own. Hence the rude laborer who exchanges his products for the less bulky products of the skilled, artistic laborer must contribute the most towards effecting the exchange. By way of illustration, take a Geneva watch that has cost the producer two hundred and fifty dollars by reason of its skilful workmanship; suppose five dollars to be the expense of getting it to market; then transportation adds two per cent to the original cost of the watch. But transportation would add twenty per cent in the case of a twenty-five dollar watch. Again: take a Turkish rug that has cost the producer five hundred dollars by reason of its beauty, and another rug of the same weight, that has cost the producer only ten dollars; call the expense of transportation five dollars for each; one per cent is added to the original cost of the rug in the first instance, and fifty per cent in the second. Bolder contrasts might be named, but these are enough to illustrate the fact that transportation even for great distances can but slightly affect those manufactures which are the most desirable. In a word, it costs but little to transport skill and taste, but much, comparatively, to transport ignorance and raw material.

In 1873, according to the statement of the American Consul at Basle, the watches sent from Switzerland to the United States were valued at $2,520,104 at the point of shipment. To pay for them it would have taken in Illinois, say, 5,000,000 bushels of corn. Now, as each party must pay, by deducting from the home price, for getting his own products to market, at what a disadvantage transportation, in the supposed case, would have placed the Illinois farmer! The Swiss, making no allowance for distance, would have paid no more for corn coming from Illinois than for other corn coming only from France. Little wonder, then, that the Illinois farmer converts his corn into pork and lard, so far as possible, before sending it across the Atlantic, that he may put into his own pocket the difference in transportation. Again: in 1873 the United

States imported embroidered goods from Switzerland to the value of $2,095,234,— a call for 4,000,000 bushels more of Illinois corn. Again: the same year and from the same country we imported silk and silk goods to the value of $5,224,116, — a call for 10,000,000 bushels more of Illinois corn: making, in round numbers, 19,000,000 bushels of corn which would have been necessary, had the payment been made in corn, as supposed, to pay for three kinds of skilled, artistic manufactures obtained from little Switzerland alone in one year. Though without a port, yet has Switzerland by means of her skilled, artistic manufactures secured for herself a commerce larger, when compared with her population, than that of any of her continental neighbors. This astonishing feat she could not have accomplished with rude manufactures. Cost of transportation alone would have prevented.

In the third place, skilled, artistic manufactures are more desirable than rude manufactures, since they give a better population. The population is better, because it is more intelligent, intelligence being the prime condition of such manufactures. It is better because it is more prosperous, has more money to spend in the procurement of all that is essential to the comfort and embellishment of life. Churches, schools, farmers, gardeners — all share in the prosperity of the educated, thrifty artisan. Compare the city of Worcester, Mass., full as it is of skilled workmen of many kinds, with a city whose manufactures are rude, and the difference between the two will arrest the attention of the most casual observer.

COMPETITION WIDENED AND INTENSIFIED.

Again: the fact must not be ignored, that the market of to-day is quite a different thing from the market of fifty years ago. Competition has been both widened and intensified by steam-carriage and telegraphic communication. Formerly the price of most products was determined by the home market, by local competition: now the price of most products is determined by the market of the world, and one's competitors are not his neighbors alone, but they are often found beyond seas and even on the opposite side of the planet. Distance counts for less and less in the transportation of all things. Indeed, it counts for next to

nothing in the case of those manufactures which embody a large degree of skill and taste, since the cost of transporting them is a mere trifle compared with their value.

The question then arises, How can foreign competition in products embodying a large degree of skill or taste be best met in the home market? By tariffs? certainly not. By cheapening labor? certainly not; but by properly educating labor. Especially is this true in the case of art-manufactures whose market value is wholly or largely dependent on their beauty. A tariff may, indeed, compel one to refrain from purchasing the beautiful foreign product, but it will not necessarily make him purchase the ugly object of home manufacture. The latter does not meet the demands of the æsthetic sensibilities, and so is not wanted at any price. Can a man who is thirsty be satisfied with bread, however good it may be? Can the ear that longs for melody be made content with the sound of a quartz-mill, however abundant the gold it stamps out? Assuredly not. Neither can the desire for beautiful things be satisfied with homely objects, though made of the costliest materials and in the most durable manner. There is, indeed, but one effectual way for any country to meet foreign competition in its home market; and that is, to put as much taste and skill into its own manufactures as the foreigner puts into his. What is true of the home market is true, with a little more emphasis, of the great market of the world.

A LESSON FOR AMERICANS.

Now, to mention nothing more, can it be doubted that the three things named, — 1, the great relative increase of the manufacturing interests and of the artisan classes; 2, the greater desirability of manufactures which involve skill and taste; 3, the greatly widened and intensified competition of the market, — can it be doubted that these three things alone fully justify the efforts made by European governments in behalf of general art and industrial education? And can it be doubted that this country ought to take seriously to heart the example of its great industrial rivals? While we guard the traditional "Monroe Doctrine" so vigilantly, warming up to a white heat, as we are so apt to do, whenever a foreign power shows an inclination to appropriate to itself a foot of soil,

or otherwise to extend its direct political influence, this side of the Atlantic, shall we take no note of that vast army of workmen which Europe is specially training for the industrial conflict, and which we must meet not only when we venture abroad, but even when we remain at home behind tariff barricades?

Surely no one upon whom devolves, in any degree, the shaping of public education in this country, should disregard the fact that it is more the market of the world than the local market that determines the price of nearly all products whatsoever, and that every American laborer must therefore face a double competition, — individually, that of his neighbors; with his neighbors, that of the world at large. For both he should be duly prepared, to wit, as well prepared as his competitors. Nothing should be left to chance; nothing to the hope that divine interposition will save him from the penalty of ignorance. He should be taught not to ignore his distant competitor because he cannot see him, but to remember, that in these days of telegraphs, steam-carriage, and restless commercial enterprise, the laws of traffic pay little heed to mountain barriers and ocean wastes. The earth has virtually lost her ancient commercial dimensions; and there is nothing for it but to give the workman a broad and thorough industrial education, based on science and art.

So it is well, indeed absolutely essential, for Americans carefully to study what European governments have done and are doing for the better education of labor.[1] While many of the political and social maxims a monarchy might desire to inculcate through its schools are not adapted to a commonwealth, yet in the matter of industrial education the thing that is good for the foreigner is good for the American; since both have to work with the same materials and implements, according to the same natural, mathematical, and

[1] Charles Francis Adams, jun., chairman of the Massachusetts Commissioners to the Vienna Exposition, says in his report: "Take, for instance, the great branch of technical and artistic education which has already been referred to. It has of late years undergone a surprising development in Europe, the results of which supply its most interesting and instructive feature to the recent Exposition. It is now exciting the greatest interest among all thoughtful men in America, and promises infinite results in our immediate future. The Massachusetts commission might well have been organized with a single view to dealing thoroughly with this department."

artistic conditions, and are subject to the same universal laws of trade. Hence the elaborate official Austrian report on drawing and art-education, here reprinted in full, becomes an exceedingly valuable document for the consideration of all who take an interest in American public education. The objection is, indeed, sometimes heard, that the educational experience of Europe cannot apply in America because the situation — political, social, and industrial — is so widely different from the European. But it is far from being wholly different. First, for reasons just stated, industrial education needs to be much the same everywhere; and, second, our manufactures, which are rapidly growing, have already reached respectable proportions. If we are to make the most of ourselves, we must become a vastly greater manufacturing people than we are to-day; and to this end we must sustain our manufactures, not by cheapening labor, nor by paying a premium on ignorance, but by properly educating the laborer.

THE NUMBERS ENGAGED IN DIFFERENT OCCUPATIONS.

In this connection it will be well to consider the significance of the following figures from the census report of the United States for 1870. They show the numbers engaged in the different occupations taken by groups.

Total population	38,558,371
Ten years of age and over	28,228,945
Engaged in all occupations	12,505,923
Engaged in agriculture	5,922,471
Engaged in professional and personal services	2,684,793
Engaged in trade and transportation	1,191,238
Engaged in manufacturing, mechanical, and mining industries	2,707,421

Observe that agriculture absorbs somewhat less than one-half of all who are engaged in the different occupations. Once the agricultural population was relatively much greater than now. But not only has it decreased; it is in the nature of things that it should continue to decrease when compared with the whole population. Nor will this change be confined to any particular part of the country. Just the reverse is true of those engaged in manufactures. Already the advance which manufactures have made upon agriculture in some States is very decided; and

by and by it will be very decided in every State, unless we choose to rely upon the foreigner, to an altogether unreasonable extent, for our manufactures, paying for them with breadstuffs and raw materials that ought to be consumed by artisans of our own. But the country will choose to do no such thing; we may, therefore, count upon a steady relative as well as absolute increase of the artisan population, and of those who dwell in cities.

Yet further, if we consider the relations which agriculture and manufactures bear to other occupations, we find that the number to whom manufactures give indirect employment, as merchants, household help, coachmen, barbers, mail-carriers, telegraph-operators, is much greater than the number receiving indirect employment from agriculture. This is to be remembered in striking a balance between the two, in determining the proper scope and character of the public education.

Let us now compare some of the leading States as to the numbers engaged in different occupations. To begin with Massachusetts, the census of 1870 gives the following figures: —

Total population	1,457,351
Engaged in all occupations	579,844
Engaged in agriculture	72,810
Engaged in professional and personal services . . .	131,291
Engaged in trade and transportation	83,078
Engaged in manufacturing, mechanical, and mining industries	292,665

These figures show that only one-eighth of the employed population of Massachusetts is engaged in agriculture, while over four-eighths are engaged in manufactures, mechanical, and mining industries. Trade and transportation employ one-seventh.

All know, at least in outline, the economical history of Massachusetts. Once the larger part of her population was engaged in agriculture, though neither the absolute numbers so engaged, nor the profits of their labor, were ever, perhaps, greater than today. Next in order of importance, came trade and transportation. Within, however, the last thirty or forty years, manufactures have outgrown every thing else, their total value in 1870 amounting to $553,912,568. But what of the economical future of Massachusetts? There will be no decadence; she will hold

her own with the country at large. Her manufactures will continue rapidly to increase, and with them her population and wealth. In general character her manufactures will undergo a decided change: they will embody more and more of skill and taste, and so will find a wider and wider market. Already, even in point of taste, some of the manufactures of Massachusetts are sufficiently good to compete successfully with similar foreign products in foreign markets. The recent steps taken by the Commonwealth to promote popular art-education will, beyond doubt, prove exceedingly wise in an economical view. It only remains to push vigorously ahead in the same direction.[1]

If we turn to the State of New York, we find the same tendency in the distribution of the population among different employments as in Massachusetts. This appears by the following figures from the census of 1870: —

Total population	4,382,759
Engaged in all occupations	1,491,018
Engaged in agriculture	374,323
Engaged in professional and personal services	405,339
Engaged in trade and transportation	234,581
Engaged in manufacturing, mechanical, and mining industries	476,775

It will be seen that agriculture takes only one-quarter of the employed population, while one-third is engaged in manufacturing, mechanical, and mining industries. Add to the latter those engaged in trade and transportation, also in professional and personal service, and you have five-sevenths of the employed population, the larger part of whom find employment, directly or indirectly, through manufactures. Here is a broad field for industrial education. In accordance with the necessities of the case,

1 "It must be remembered, that, if we want quick and valuable results, our outlay and exertions must be in proportion to our desires. To give a lukewarm support to the movement, and then, ten years hence, grumble because we have not effected as great changes as other countries in a like period of time have done, would be but a sorry way to bring about a beneficial result; though it is what is likely to happen, unless a very strong interest is aroused in the public mind in behalf of the idea." — *From Special Report on "Museums of Art and Industry," by Louis J. Hinton, one of the Massachusetts Commissioners to the Vienna Exposition.*

the legislature has just enacted a law requiring industrial drawing to be taught in all the principal public schools of the State.[1]

Again: the situation is much the same in Pennsylvania, as shown by the following figures from the census for 1870: —

Total population	3,521,951
Engaged in all occupations	1,020,544
Engaged in agriculture	260,051
Engaged in professional and personal services	283,060
Engaged in trade and transportation	121,253
Engaged in manufacturing, mechanical, and mining industries	356,240

Thus agriculture absorbs but one-quarter of the employed population, while a little more than one-third are engaged in manufacturing, mechanical, and mining industries. Even without anticipating a further relative increase of her artisan classes, Pennsylvania has already reason enough for making liberal provision for the industrial education of her people.

Let us, lastly, consider the following figures from the census of 1870, which exhibit the general situation in Illinois: —

Total population	2,539,891
Engaged in all occupations	742,015
Engaged in agriculture	376,441
Engaged in professional and personal services	151,931
Engaged in trade and transportation	80,422
Engaged in manufacturing, mechanical, and mining industries	133,221

[1] The following, introduced by Hon. Warner Miller of Herkimer County, has become a law of New York: —

AN ACT RELATING TO FREE INSTRUCTION IN DRAWING.

The People of the State of New York, represented in Senate and Assembly, do enact as follows: —

SECTION 1. In each of the State normal schools the course of study shall embrace instruction in industrial or freehand drawing.

SECT. 2. The board of education of each city in this State shall cause free instruction to be given in industrial or freehand drawing in at least one department of the schools under their charge.

SECT. 3. The board of education of each union free school district, and in each school district incorporated by special act of the legislature, shall cause free instruction to be given in industrial or freehand drawing in the schools under their charge, unless excused therefrom by the superintendent of public instruction.

SECT. 4. This act shall take effect October first, eighteen hundred and seventy-five.

Observe that in this, the greatest of the agricultural States, a trifle more than one-half of the employed population is engaged in agriculture, while a trifle less than one-third is engaged in trade and transportation, and in manufacturing, mechanical, and mining industries. To-day agriculture holds the same commanding position in Illinois that it once held in Pennsylvania and New York. But this will not always be; manufactures will gradually come to the front in Illinois as elsewhere. Why, indeed, should not the larger part of the surplus food produced by Illinois farmers be consumed in Illinois, as it might be if she had a large manufacturing population? Were the manufactures of Illinois as well developed, in proportion to her agriculture, as they are in Massachusetts, her population would be to-day 10,000,000. Would that be the worse for the farmers? Or, take a European comparison which has already been used: Switzerland, with 15,223 square miles of territory, much of it waste, had, in 1870, a population of 2,669,-147, or somewhat more than that of Illinois with 55,405 square miles of territory. Though she is without a port, the commerce of Switzerland, as previously stated, has long been, in proportion to her population, larger than that of any of her continental neighbors, mainly because of the great skill and taste of her workmen industrially educated. If Switzerland, in the heart of Europe and with enemies all about her, can make such a record, what may not Illinois, in the heart of America and surrounded only by friends, accomplish, if she will?

Skill and taste are the product of education in the main: they are cosmopolitan, can make themselves as much at home in one place as in another; they certainly do not prefer a sterile to a fertile soil, — Switzerland to Illinois. Among all the kinds of manufactures which involve skill and taste, and do not require water-power for their cheap production, there undoubtedly are many kinds well adapted to the climate and other local conditions of Illinois. Whether they are ever successfully prosecuted in Illinois, will depend largely on whether the State does what has proved so efficient in Switzerland and in so many other parts of the world, — whether the State gives her people a suitable education for the development of their skill and taste.

EXTENT AND GENERAL CHARACTER OF AMERICAN MANUFACTURES.

The following figures show the extent of American manufactures during the year which closed May 30, 1870, and their general character, as disclosed by a comparison of the value of the manufactures with the value of the raw materials consumed: —

Value of raw materials consumed	$2,488,427,242
Value of products	4,232,325,442
Value added by manufacture	1,743,898,200
Wages paid	775,584,343
Hands employed	2,053,996

The value of our manufactures in 1810 was $198,613,471. As the population at that time was 7,239,881, the manufactures amounted to $27 for each person. In 1870 the amount was $109, or four times greater than in 1810. Some allowance must be made for the depreciation of currency; but allowance must also be made for the cheapening of production, which has resulted from a better control of the forces of nature, and from the use of labor-saving machinery. So it is quite safe to assume that the quantity of manufactures has been increased fourfold for each person within the last sixty years. According to the census of 1870, to make another comparison, the value of all our farm products, including betterments and additions to stock, was $2,447,538,658, — only forty per cent more than the value *added* to raw material by the processes of manufacture. Thus it will be seen that American manufactures, though as yet in their infancy, have nevertheless attained to very respectable proportions.

It is, however, to be specially noted and remembered that the value added by the processes of manufacture is not so great by $744,529,042 as the value of the raw materials consumed. This indicates that the manufactures, as a whole, are exceedingly rude, that they embody very little of the skill and taste which by increasing the quality of products add to their market value.

Here let us briefly consider the nature of skill and taste. Skill may be exercised for two purposes: 1, to accelerate production; 2, to improve the quality of objects. Whatever enhances the quality of objects tends to enhance their market value; whatever

accelerates production tends to lower prices. The skill which devises labor-saving machinery, and then tends it, must of necessity diminish the value added to raw material by manufacture; and, the greater the expenditure of skill in this direction, the less it will manifest itself in the price of products. It is not enough, however, to exercise skill to cheapen production; it should also be exercised to improve the quality of things made, and thus to advance prices. But it is taste especially which can contribute to the value of innumerable manufactures; which always tends to enhance, never to diminish, prices. True, it does not necessarily require more labor to make an object beautiful than to make it homely; but the beautiful object always commands the higher price, and so, while the consumer is better pleased, the producer is better paid. That is the way of it.

Now, Americans have especially distinguished themselves in devising labor-saving machinery, and have been abundantly rewarded for thus cheapening production. Hence it does not follow that but little skill has been expended on American manufactures, because the value added by manufacture is so much less than the value of raw material consumed. There has been little lack of skill that increases quantity. But what is said of Swiss, English, French manufactures, as a whole, should also be said of American manufactures, namely, that their price is advancing[1] in spite of cheapened production; and this will be said of them when we give as much thought to improving their quality as we have given to augmenting their quantity. Though there is ample room for further cheapening production, yet we shall find it quite as much to our advantage to improve the quality of our products.

OUR EXPORTS AND IMPORTS COMPARED.

If we now turn to our foreign trade, and compare our exports with our imports, we find that, to speak in general terms, we export breadstuffs and raw materials, and import skill and taste.

[1] It is estimated that in England alone the force obtained from coal, and applied to mechanical purposes, does the work of one hundred millions of men, without any off-setting demand for food and clothing. And yet the prices of English products, as a whole, are said to advance, because they are so greatly improved in quality.

The National Bureau of Statistics gives the following figures for the year ending June 30, 1874 : —

TOTALS.	
Domestic Exports (currency value)	$693,039,054
Foreign Imports (gold value)	595,861,248

BREADSTUFFS.	
Exports	$161,307,864
Imports	13,042,771

In the case of breadstuffs,— that is, of wheat, corn, barley, and the like, — skill can do little more than cheapen production and lower prices. There is no opportunity for the exercise of taste.

PROVISIONS.	
Exports	$78,348,225
Imports	4,904,824

To these exports, pork contributed $5,808,712 ; lard, $19,308,-019 ; bacon and hams, 33,384,108. These three articles, having a value of $58,600,839, represented so much condensed corn. Without this reduction of bulk, the corn would not have found so profitable a market ; perhaps it would have found no market at all.

TALLOW.	
Exports	$8,135,320
Imports	none.

RAW COTTON.	
Exports	$211,223,580
Imports	704,784

Skill can cheapen the production of raw cotton, and bring down its price, but it can do little or nothing towards improving its quality. There is no room for the exercise of taste.

COTTON MANUFACTURES.	
Exports	$3,091,332
Imports	28,183,878

In other words, with the amplest supply of raw material at home, we not only fail to supply foreign markets with our manufactures, but we do not even supply our home market. Manufactures of cotton present an opportunity by the application of skill and taste to enhance prices. But how little of skill and

taste we sent abroad! On the other hand, England exported cotton goods in 1872 to the value of $384,787,944. Her total cotton manufactures amounted in 1870 to $447,096,000, while the value of the raw material consumed was but $202,296,000; and so the sum of $244,800,000 was added by the process of manufacture. For the same year the total value of cotton manufactures in the United States was $177,489,739, while the value of materials consumed was $111,736,936, of which about $100,000,000 can be set down to raw cotton. Note, that, while the value added by manufacture in England is considerably more than the value of the raw cotton consumed, it is in the United States considerably less; and this, too, though raw cotton costs more in England than it does here, and though the same quality of labor is cheaper than with us. How, then, does England manage to carry the price of her cotton goods above the price of ours? By putting more skill and taste into them.

WOOL MANUFACTURES.

Exports	$ 124,099
Imports	46,731,745

Here is a better opportunity than in the case of cotton manufactures for improving the quality of the goods by skill and taste, and thus advancing their price. And so our imports increase accordingly, with a diminution of the exports. Total value of wool manufactures in the United States, according to the census of 1870, was $155,405,358; value of wool consumed about $80,000,000.

SILK MANUFACTURES.

Exports	none.
Imports	$24,349,037

These manufactures afford an opportunity for a large display of skill and taste; and so we export none. But little Switzerland, according to our consul at Basle, sent to the United States in 1874 silk and silk goods to the value of $4,842,384. The value of silk fabrics produced by France in 1870 was $200,000,000. The census for 1870 puts the total value of *all* textile manufactures in the United States at $380,913,815, not quite double the silk manufactures of France.

FANCY GOODS.

Exports	$ 302,497
Imports	4,518,987

MANUFACTURES OF FLAX.

Exports	none.
Imports	$17,473,765

The quality, and hence the market value, of these manufactures depends largely on the skill and taste exercised in their production; and so we export none. But the value of linen manufactures exported by England in 1872 amounted to $52,592,448.

LEATHER.

Exports	$3,940,426
Imports	6,138,528

GLASS AND GLASS WARE.

Exports	$ 631,801
Imports	6,257,978

EARTHEN, STONE, AND CHINA WARE.

Exports	$ 59,304
Imports	4,882,579

IRON AND IRON MANUFACTURES.

Exports	$13,181,411
Imports	33,703,455

Of the imports more than $27,000,000 consisted of iron manufactures, according to the Bureau of Statistics.

AGRICULTURAL IMPLEMENTS.

Exports	$3,090,135
Imports	none.

ILLUMINATING MINERAL OIL.

Exports	$37,561,513
Imports	1,327

MUSICAL INSTRUMENTS.

Exports	$550,327
Imports	870,348

PAINTINGS, ENGRAVINGS, STATUARY, PHOTOGRAPHS, CHROMO-LITHOGRAPHS.

Exports	$ 161,503
Imports	1,437,287

GOLD AND SILVER.

Exports	$50,699,632
Imports	28,456,906

Thus it is clear from the figures given that we exchange rude products for those which embody skill and taste. This is doubly to our disadvantage. Compared with our rivals, we lose, first, in production, because skilled, artistic labor is always best paid; then we lose in transportation, because our products are so bulky. The nearer the market, the better at all times: especially is this true in the case of rude products, natural or manufactured, the cost of transporting which is great when compared with their value. Hence it is that manufactures, by providing a convenient market, always contribute so much towards the prosperity of the farmers in the immediate neighborhood. The better the manufactures, the better for the farmers: 1, Because those engaged in them earn more, and so are able to purchase more of the farmers; 2, Because, the more valuable the commodities into which the farmers can convert their own, the less it will cost them in the way of transportation, indirectly, to secure from a distance such commodities as are not produced at home.

And so the great industrial problem to be solved by the American statesman and educator is this: How can we make the most of our natural resources, which, though varied and vast, are but the basis of wealth? How can we manage to consume in home industries the larger part of our raw material, adding to its value by the magic touch of taste and skill? Instead of exporting raw material in the main, how shall we become an exporter in the main of commodities the greater part of whose value has been added by the processes of manufacture? Until such is the case we shall not attain to the highest and most enduring prosperity; we shall not occupy our true place among the nations of the earth. The problem cannot be solved by protection, of which we hear so much, certainly not by protection alone; nor yet by free trade, whose special function is to distribute natural advantages, not acquired ones like skill and taste: it can only be solved by education undertaken for definite industrial purposes, and directed by reason and experience. And this education, in its elements, must aim to develop the skill and taste of the whole people,[1] not merely of selected classes. Even if it were in the

[1] In his report on education, John W. Hoyt, of Wisconsin, U. S. Commissioner to the Paris Exhibition, 1867, says, after quite a full review of the whole

least desirable, which it is not, to give to the early training of each one a specific direction, it could not be accomplished in any rational, satisfactory manner; for no man has sufficient prescience to forecast the future of any child, to tell just how his natural powers will develop, just what will be the great controlling circumstances and requirements of his manhood. All early public education should aim, 1, at the greatest good of the greatest number; and, 2, at the discovery, though not at the special training, of special capacities. To such popular training of skill and taste as indicated two objections will be made: 1, that it will give more educated labor than is required; 2, that it will produce a distaste for manual labor. As to the validity of the first objection we can best judge after we have once fairly made the trial. For the present it is perfectly safe to assume that there is enough stupidity inherent in human nature, which cannot possibly be overcome by any amount of education, to supply all the ignorant labor which may be required in rude employments. As to the validity of the second objection, the truth of the matter is, that such an education will cause the workman who has natural capacity enough to acquire it, to take greater pride and delight in his work.[1] This thing alone is quite sufficient to justify much effort to secure it; so think foreign governments.[2]

European field, "Both (economical and æsthetic reasons) demand, with a voice that should be heard and heeded, the prompt adoption of measures for providing instruction in the elementary principles of drawing and modelling in all our public schools, and in the industrial applications of art in all our schools of applied science."

[1] Louis J. Hinton, who attended the Vienna Exhibition, 1873, says, in his special report to the State of Massachusetts on "Museums of Art and Industry," "One fact is proven, standing firm as a rock, by the united testimony of all the European savants who claim to speak with authority on this subject, — that is, that, if any improvement is to take place in the art-industry of the country, it must come from the better education of the people in art, and this must commence with popular instruction in freehand drawing. It is also shown that such knowledge as is imbibed at the drawing school, the technical educational class, art-gallery, and the art-industry museum, educates men to feel more interest in their work; that new methods of doing old-time work suggest themselves to the man who has been taught in the principles upon which the success of his work depends."

[2] The following extract from a circular dated June 7, 1870, and addressed to her Majesty's diplomatic and consular agents in all parts of the world,

THE GREAT WEALTH OF FRANCE.

It is just here, in the application of skill and taste to industry, that we find one of the main causes of that vast wealth of France, which is indeed a marvel when we consider that she has been engaged in so many costly wars, that her national debt is unequalled, and that her people are not excessively overworked, but, on the other hand, are the gayest in the world. Her manufactures have long been renowned for the skill and taste which they embody; and it is these manufactures, not, as with us, breadstuffs and raw materials, that compose the great bulk of her exports.[1] Her textile manufactures alone amount to some $700,000,000 annually, nearly double the textile manufactures of the United States. Her exports of all kinds of manufactured products in 1874 amounted to $434,513,800. As was to be expected, agriculture flourishes no less than manufactures. In 1869 France, with a domain smaller than that of Texas, produced 297,000,000 bushels of wheat, that being 67,000,000 bushels more than the product of the United States as given in the census of 1870. She also produced 275,000,000 bushels of potatoes, that being 155,000,000 in excess of the American yield. The value of the natural alimentary products which she exported in 1874 was $298,335,000, about the same as the value of similar exports from the United States. Wine and brandy, cheaply transported, made up $60,000,000 of the whole amount. These figures are enough to

shows that the British Government realize the importance of having workmen take pride and delight in their work: —

"What is the quality of the work executed by workmen? Are they generally competent in their several departments? Do the artisans take a pride in their work, and put their character into it? Would they make a stand against doing bad work as they would against receiving bad wages? Is there any class of artisans whose work can be depended upon as good from the sense of honor they have in executing it? What influence has the skill and trustworthiness of the workmen in any department of industry exercised upon the rate of wages?"

[1] According to "L'Economiste Français," the total value of French exports for 1874 was $775,550,600, grouped as follows: manufactures, $434,513,800; natural alimentary products, $298,335,000; other merchandise, $42,701,800. The following are some of the items: silk tissues, $95,433,200; woollen tissues and yarn, $78,218,400; cotton tissues and yarn, $15,859,400; linen goods, $12,941,000; wines, $47,316,600; floss silk, $24,065,800; cereals, $28,291,400.

show that in France agriculture is exceedingly prosperous; and this great manufacturing and agricultural prosperity is due to what? To various things, of course; but probably to no one thing more than to the art-industrial education of the people. Such is the view of the Austrian report here printed, and such is the view of numerous other authorities.[1] Looking at the experience of France, one may safely affirm that the farmer who contributes to the support of popular art-education, is most effectually promoting, though indirectly, the advancement of his own fortune.

GOOD FOR THE WHOLE, GOOD FOR THE PARTS.

Whatever promotes the prosperity of a nation as a whole, must, of course, promote the prosperity of its parts. Skill and taste do the former; they must, therefore, promote the prosperity of a city, town, or village. Then how to secure this skill and taste, is the question. To repeat what has already been said, there is but one positively certain way, and that is to educate. Skill and taste are the peculiar products of no land, nor can they ever be had for the mere wishing. In protective tariffs there is too much premium on

[1] A recent number of "The New York Tribune" contained a highly eulogistic letter from Hugh McCulloch on "The Finances of France." Mr. McCulloch was formerly Secretary of the United States Treasury; he is now a banker in London. It is thus he speaks of the French artisans to whose skill and taste he attributes a large part of French prosperity: "They are eminently skilful and tasteful. The raw materials, which are the basis of articles of taste and elegance, acquire in the hands of French artisans greater value than in the hands of the artisans of any other nation. The manufactures of France are varied and extensive, and, being uninterrupted by 'strikes,' her capacity to produce seems to be almost unlimited. French goods are found among all nations, and there is a constantly increasing demand for them at remunerative prices. In every thing appertaining to personal adornment, France leads the world. The palm may be yielded reluctantly, but all nations do admit the superiority of French taste and of French manufactures in all matters of dress. 'I should like to see,' says 'H. H.' in her charming 'Bits of Travel,' 'I should like to see the woman who could go through Paris without buying a new gown.' It would be difficult to find a tasteful woman anywhere who does not approve of the latest style from Paris. The tribute which other nations pay to the ingenuity of French artisans and artists in the manufacture of dress goods, and the making up of dresses, is exceedingly large. Even in England, so different in the character of her people, not only has French cookery superseded the English, but French taste in every thing appertaining to wearing apparel is the standard of fashion."

ignorance for the lasting good of even those they are intended specially to protect; and the free trade which exposes rude labor to the sharp competition of skilled, artistic labor, puts the former at great disadvantage as well in the home as in the foreign market. Against foreign competition nothing but skill and taste can give our labor effectual and permanent protection, while leaving us all the advantage of a natural system of exchange. At home, since trade is unrestricted, there is, of course, nothing left any town or State but to protect itself by properly educating its labor, and thus re-enforcing whatever superior natural advantages it may possess. This it owes to itself as a State or town, and then to each child reared within its limits.

GENERAL CHARACTER OF PUBLIC EDUCATION.

The general character of this education should not be determined by merely local circumstances; for with perpetual migration, and in the absence of caste, there is no assurance that any American child will do what his father did before him, or will die where he first saw the light. Though born in the most secluded farmhouse, he should be treated as the child of the whole country, and so educated that he may have a fair chance with his fellows wherever he may make his home. By this it is not meant that he should be trained to a special knowledge of all kinds, or any kind, of labor, but that he should be made acquainted, through the study of language, mathematics, science, and art, with the general principles which underlie them all, and with those practical applications which, without retarding the acquisition of principles, can be learned at the same time. General culture and a fair start in any pursuit demand so much for all. Again: in determining what should be the general character of the education given American youth to-day, we must regard the present and prospective condition of things, and not educate on the basis of what was required fifty or twenty-five years ago. We must also look abroad, recognizing the fact that American life and industry feel the influence of the remotest parts of the civilized globe. It is only by thus shaping the general form of American popular education that it can be made adequate to the requirements of the age.

RECAPITULATION.

Here let us recapitulate the points which have been considered in this discussion: —

1. A long age of industrial conflicts has begun. The governments of Europe, realizing that henceforth national supremacy will be determined more and more by industrial supremacy, are arming their workmen of all kinds and grades with the best weapons that art and science can furnish.

2. All that they are doing for industrial education is justified by the fact, that the artisan class are rapidly gaining upon the whole population, and that manufactures are rapidly increasing in comparative importance.

3. It is justified by the fact that the competition which the workman must meet is growing wider and more intense every day.

4. It is also justified by the fact that manufactures embodying skill and taste are more advantageous to a country than rude manufactures.

5. It is well that we should study what Europe is doing for industrial education, because in her artisans we find our great rivals; because industrial education, however it may be with political education, needs to be much the same the world over, and so what is good for a European is good for an American.

6. In the matter of numbers, our artisan classes, compared with the rest of our population, are advancing to the front; and our manufactures, already of respectable proportions, are steadily gaining in relative as well as absolute importance. It is only by carrying our manufactures to the highest pitch of excellence that our agriculture can be made the most prosperous.

7. To-day our manufactures are distinguished rather for quantity than quality. Much skill has been expended for the purpose of accelerating production and lowering prices. Compared with this the expenditure of skill and taste for the purpose of increasing quality, and thereby advancing prices, has been but slight.

8. Hence the value added by the process of manufacture is much less than the value of the raw material consumed. Hence we export food and raw materials, and import manufactures embodying skill and taste. All this should be decidedly modified by

improving the quality of our manufactures, and by consuming a larger proportion of our raw materials at home.

9. Price can be increased only by increasing the quality of manufactures; and the quality can be increased only by an increased expenditure of skill and taste, especially of taste as displayed in the form of the object or of its decoration.

10. Skill and taste are mainly the product of education. It is only upon workmen who have been suitably educated in science and art, especially in art, that we can securely count to carry our manufactures to any high pitch of excellence. Back of the skilled, artistic workman, needs to be a public taste to create a demand for his products, and to stimulate him to greater efforts.

ART-INDUSTRIAL EDUCATION THE PRIME NECESSITY.

According to the condition of things which has been described, the future growth and prosperity of the United States must come largely from the growth and prosperity of her artisan classes. The growth and prosperity of these classes will depend on the success with which they can meet the competition of the world; and this success will depend largely on the school education they have received, and especially on the art element of that education. Europe is putting into her industries millions of men and women trained in art and science, but especially in art; and she is making vast and systematic efforts to elevate as well the public taste as that of the artisans. We can do no less; we can meet such competition only in kind; our people must be educated in art. Now, the basis upon which all instruction in art must rest is drawing, — the representation of form. Many, taking some one feature of drawing to be all there is of it, greatly misapprehend its true scope. For example, drawing may be thought to consist simply in the representation of objects which already exist; whereas for industrial purposes drawing must be mainly employed for the representation of objects which do not exist, but which are to be made. An account of the different kinds of drawing, with their manifold applications, would be interesting, but it is not necessary to give it here.

As to the general manner, however, of conducting instruction in drawing and art, a few words may not be out of place. It

should be thoroughly rational, — should accord with those recognized educational principles which can never be safely violated, whatever the subject taught. If drawing and art have no elements which can be treated in a rational manner, as all other studies have, then they cannot be taught at all. What is acquired simply by imitation, or as a matter of mere vague feeling, is never learned in any true sense, — is never understood. This Austrian report treats instruction in drawing and art as a matter which can be subjected to reason, and treated according to true pedagogical principles. Hence it is believed, that, while it will tend to give a juster view of the scope and importance of art-industrial education, it will also afford knowledge that will prove of special service to the teacher. There are points in the report which will be condemned by some who are good authorities on art-education, — points which future experience and investigation may show to be incorrect. But the fact remains, that the report is pervaded by a rational educational spirit, and so must command respect for the principles which it lays down for the guidance of art instruction. Some of these principles are here enumerated: —

1. All instruction in drawing should have for its basis, geometry.

2. Conventional forms, which are regular, should be drawn before natural forms, which are irregular.

3. Ornament should be based upon a study of nature, especially of plant forms. This does not mean that the drawing of the latter should precede the drawing of the former.

4. When a design for an object is made, the form should be adapted to the use, and the ornament should be subordinate to the object. The decoration should not count for every thing.

5. Much attention should be given to the drawing of historical forms illustrative of different styles. The drawing-copies should have a pronounced character.

6. When natural forms are drawn, they should be first referred to the general geometrical forms upon which they are based. Then the historical treatment of similar forms should be carefully studied.

7. Knowledge should precede execution. Nothing is more deadening to the intellect of the pupil than to copy a drawing

which he does not understand. He should not only learn to do a thing, but the reason for doing it.

8. In the order of instruction, the rendering of pure form should take decided precedence of light and shade.

9. Instruction in drawing should not be limited to any one kind of drawing.

10. In order to develop the taste of the learner, the drawing-copies and models should be as beautiful as it is possible to make them. This is a matter of the utmost importance.

11. The pupil should be constantly exercised in making original designs, — original applications of all the principles he acquires.

12. The study of the human figure should not be made the foundation of art-industrial education. It should not form the beginning of art-instruction for any purpose.

13. Those teachers succeed best who recognize instruction in drawing as an integral part of general culture, and treat it according to systematic pedagogical principles and methods.

14. The instruction, in order to reach all, as demanded both by general culture and by industry, should be made universal, and should begin in the primary school. Special applications should be reserved for special schools.

TWO OBJECTIONS.

Without doubt, two objections will be made to the general drift of this discussion. The one will come from those who hold that the public schools should aim at general culture, at mental discipline, giving little heed to the amount of information imparted, and no heed whatever to direct business or industrial results. To form, not to inform, to make men, not workmen, is, in their judgment, the only thing worthy the consideration of a public educator. But there is another, and, it is believed, a more sensible view, which holds that to make a good workman is to make a man; that the acquisition of useful knowledge does not stand in the way of mental discipline; that the public schools should aim 1, to teach the things of direct use to the largest number, and, 2, to teach these things in such a way as to afford the utmost amount of mental discipline. A knowledge of the practical applications of drawing and art is of direct use to vast numbers.

To show this has been the main object of the discussion thus far. It might also be easily shown that this knowledge, and the discipline which comes with the effort to acquire it, form an essential element of general culture, an element obtainable from no other study, an element which, if one lacks, he cannot be said to have been symmetrically trained. Indeed, until this element is added, our public education must continue, as it is, emphatically lop-sided, not only from the industrial, but from the culture point of view. But this is a matter, which, important as it is, need not be considered at the present time.

The second objection will come from those who look upon art as something peculiarly divine. They are shocked when one talks of making art contribute to the daily wages of the artisan, to the volume of trade, to national prosperity, and the sinews of war. They believe that the decided industrial tendency which art-education is taking in this country will prove destructive to all the higher manifestations of art; that a people once taught to make beautiful calico prints, shoes, table-ware, furniture, will be content to do nothing more. They also believe that instruction in neither industrial nor fine art can be reduced to fixed principles and methods, and so believe that art cannot be taught in schools as other things are taught. Consequently they take delight in telling how impossible it is to do what the great masters have done, instead of attempting to show how the great masters actually went to work to secure their wonderful results.[1] It will be proper to answer these objectors, — to show that there is no antagonism, but the reverse, between industrial art and fine art, and that each rests upon a mass of definite, teachable facts and principles, many of which they have in common.

[1] "The lectures to the public are given from a different standpoint than that adopted by many of our lecturers on art and its technics. In Vienna the lecturer aims to show the young aspirant how to make a beginning, and how to progress upward in the study of the fine arts; while here lecturers who attempt to discourse upon art and artists generally strive to show how impossible it is for any one to reach the height attained by the masters of old, thus chilling the wakening enthusiasm of their hearers, among whom, perhaps, may be some who would have liked to make an effort to acquire art skill and knowledge for themselves." — *From the special report made by Louis J. Hinton, who attended the Vienna Exposition, to the State of Massachusetts, on "Museums of Art and Industry."*

NO HISTORIC ANTAGONISM BETWEEN FINE ART AND INDUSTRIAL ART.

No broad and clear-cut distinction can be made between fine art, and art as applied to industry, such as will enable one to say, all upon this side belongs to fine art, all upon that to industrial art. It is true that in certain particulars they differ decidedly; but in others they as decidedly agree. It is with them as with poetry and prose, with speaking and singing, with pure geometry and geometry as applied to mechanics. It is no degradation of art, as the same thing is no degradation of geometry, to make it subserve the cause of industry; that is only making art perform a portion of its legitimate work. History shows that the periods which have been especially distinguished for achievements in fine art have also been especially distinguished for applications of art to industry. Recent times furnish an illustration of this fact in the case of France. Of her art it may be most emphatically said, that it rests upon an industrial basis; yet where has fine art flourished better during the last hundred years? Again, many of those familiar with the individual lives of the great masters know that many of them began their studies and their work with art applied to manufactures. From this industrial basis they advanced to painting and statuary, to the representation of intelligence, of spirit, of beauty in its highest form. Nor did the great artists of former ages think it beneath their dignity, unworthy their powers, to devote a part of their time, even in the height of their renown, to making designs for industrial purposes. They were in sympathy with the working world around them. These historical facts are enough in themselves to show that there is no antagonism between fine art, and art applied to industry. A rational consideration of the matter, showing that the two have many teachable things in common, only confirms the verdict of history.

ART NOT A MERE MATTER OF FEELING, BUT TEACHABLE.

Every teachable thing must have an indisputable basis of fact and reason. It is utterly vain to attempt to formulate and teach what is a mere matter of vague, undefinable feeling; for when the best has been done there is always need to "explain the explanation." Hence it is that those who regard art mainly or wholly as

a matter of feeling, believe it cannot be taught as other things are taught. If their view of the nature of art is correct, then their view of the teaching is also correct. But the consequences extend much further than they imagine; for such a view of art leads naturally to purblind criticism and chaotic rhapsody from those who discourse upon art; while the work of those who practise art in such faith can but display the same uncertain character.[1] But others there are, and their number is increasing, who believe that art has its clearly defined, teachable features, which can be taught in the same rational way that other things are taught. They do not claim that all matters relating to art can be thus taught, that great artists can be manufactured to order. By no means. With Winckelmann they acknowledge they cannot tell, for example, what beauty is in the last analysis; yet they claim that they can clearly define some of the laws of beauty, and teach one to discriminate with intelligence between ugly and beautiful objects. This is nothing more nor less than what happens in every other department of knowledge.

Ask the biologist to tell you what is vegetable or animal life in its last analysis, and he will reply that it is impossible. But will

[1] When one, in the use of language, gives no heed to fixed grammatical rules and rhetorical principles, but relies alone upon his feelings for proper expression, the result is apt to be somewhat remarkable. Here is an illustrative instance. "The Boston Advertiser," May 25, 1875, contained the following patriotic burst from a circular issued by an Irish organization: —

"*Remember* 1775. — Sons of the sires of '98, you are respectfully reminded by this notice, and in accordance with the spirit of '76, together with the patriotism of this organization, that on the coming 17th of June you will respond together with the tens of thousands who will rejoice to honor the memory of the past, and perpetuate the chivalry of those whose sons were emblazoned with freedom against tyranny, and resolved to die, or live as free men, the result of which shook the pillars of tyranny and despotism in Europe. It is hoped that you will join with us on this centennial celebration with martial music and freeman's duty, beneath the shadow of Bunker Hill, in glorious Columbia, the refuge of the oppressed of all nations, as you are the sons of the fathers whose untiring patriotism and love of freedom made these British vipers bite the dust."

Here we have a suitable occasion, and plenty of feeling, — two essential conditions for a display of "fine art" in writing. Verily, the result would have been more pleasing, had the writer paid some attention to a few simple things that should be learned by the youngest pupils in a grammar school. But such displays are not confined to literature alone: they are witnessed in art, when the artist takes feeling alone for his guide. This is the truth of the matter. Every artist, as every writer, must work according to definite rules and principles which he has either been taught, or else has acquired by experience.

he hesitate about giving an explanation of the laws and conditions of animal or vegetable growth? No, indeed. He will assert that he knows much about these matters which can be described and taught with the utmost certainty. Ask the chemist whether he can inform you what gives to food that peculiar flavor, lacking which food is not appetizing and life-supporting, and he will reply that it is beyond the reach of chemical analysis, and that no chemically compounded food can be substituted for the natural product. But he will not hesitate to say that he can give a vast deal of other and useful information about food; that he can tell what ingredients to add to any given soil to improve the wheat crop, and with what to feed animals to keep them in health and to improve their flesh for the table.

Just so it is with those who have made a study of what is called, for the want of a better name, Art-science. While they realize and acknowledge that many things pertaining to art have not yet been explained, and that some of them probably never will be, they, on the contrary, hold that other things have been definitely settled, and can be taught with precision. This teachable art-knowledge has been derived from a study of art as illustrated in the works of the past, also from the study of nature as the original source of art. Some of it has come, indirectly, from a study of nature for other purposes, as for the purposes of chemistry and physics; indeed, it is impossible to draw a clear line of demarkation between art and science. Art is not wholly independent of other lines of human endeavor. It may not be out of place to enumerate some of these teachable elements of art.

FORMS AND LINES.

All art involves the representation of forms. The simplest and elemental forms, those upon which rest all the varied forms of art and nature, are geometric. It is essential to know these as they really are, and the power to draw them should be acquired before an attempt is made to draw forms of greater intricacy. But the representation of forms by any method calls for lines, and not unfrequently for mathematical lines, that is, lines which are expressed by an equation. Mathematical lines are especially employed by those who are engaged in designing the beautiful forms

of objects for manufacture and in decorative art, as well as by draughtsmen and architects, who use them for purposes of construction. Nature, too, employs them: thus her use of the variable spiral is charmingly illustrated by the longitudinal section of a nautilus shell. Indeed, her whole fabric rests upon geometry, from whose rigid outlines she departs only in matters of detail. The artist should, therefore, be perfectly familiar with geometric forms and mathematical lines, making this knowledge aid him, as it can most effectually, in the production of new forms for industrial purposes, and in the rendering of natural forms for purely artistic purposes. Now, these things can be taught with mathematical precision; a "feeling for form" is not at all essential.

SEEING WITH THE UNDERSTANDING.

All art involves the seeing of objects just as they are presented to the eye by their outlines, and by the modifications of light and shade. If the forms are imaginary, they must be represented as they would appear if they existed and were seen under the given conditions. Mere possession of the faculty of sight is no guaranty of that true vision which is required by art. If one would see truly, he must see with the understanding. To this end the essential thing is a knowledge of the laws of vision, of foreshortening, of perspective effects, of the projection of shadows; and all this knowledge rests upon a rigid mathematical basis, and so can be imparted with mathematical precision. Mere "feeling for light and shade," or for any thing else, has nothing to do with the matter. Of course there is much about *chiaroscuro* that cannot be taught with such positive assurance.

COLOR.

Both decorative and pictorial art have much to do with color. Now, in the study of color there are three definite things to be regarded: facts, scientific laws, historic usage. Different colors can be learned as facts; and, in learning them, one has the fixed solar spectrum for his guidance. Thus the eye can learn readily to distinguish thousands of colors. There is also a knowledge of dyes, of pigments, of approaching and retreating colors, and of

certain arrangements of colors, which can be acquired in the same way. The scientific study of color shows that all the observable facts are subject to rigid laws, which can be explained with pedagogical precision, and a knowledge of which contributes greatly to one's success in the use of color, or to his enjoyment of its effects. Simply by repeated experiment one may learn, for example, that, if he desires to make an exact copy of a colored pattern, he must not use just the colors he thinks he sees, but other colors, which, placed side by side, will produce the general effect of the given pattern; but a scientific study of the subject enables him to understand the reciprocal influence of juxtaposed colors, and so to produce at will any effect that may be required. Thus something more than the mere faculty of sight is demanded for the intelligent handling of color. It is true that a person who has a quick perception of color, and a very retentive memory, may learn, without attending at all to the science of color, a great deal about its proper artistic use; but what he learns slowly in this empirical way, he would learn rapidly by the scientific study of his subject, and, when once master of the science, he would be prepared to "mix his colors with brains." An historic study of color shows how color has been used. This is sure ground, too, especially so far as the use of flat tints for decorative purposes. Of course there is much essential to the proper handling of color that cannot be formulated with scientific precision. Especially is this true in the case of *chiaroscuro;* yet a prior knowledge of what can be taught with scientific precision is essential to a complete mastery of what cannot be thus taught. And so it is not merely a blind "feeling for color" that the artist should possess, but also positive knowledge.

DECORATIVE ART.

Decorative art employs both form and color; and, so far as these can be taught with precision, so far decorative art has a teachable basis. But other things there are which can be taught with precision, — things to imitate, things to shun; things, if one does imitate, he is certain to go right, and things, if he does not shun, he is certain to go wrong. Among the things to imitate is the rhythmical construction and the rhythmical arrange-

ment of ornamental forms, a matter which can be so readily exemplified by an appeal to historic usage, or by an appeal to nature, especially to the vegetable world, — the great source of decorative art. It is this rhythm, more than any thing else, that distinguishes decorative from purely pictorial art. Then the use to which the decorative object is to be put, the material of which it is to be made, and the mode of production, the position and light in which the ornament is to be viewed after it has been wrought, with many other particulars, are all to be duly considered. About these matters there is much that can be positively taught. Thus an ornament suitable to engrave on silver may be altogether unsuitable to cut in granite, a material so different from silver; and an ornament to be viewed in a poor light, or at a great elevation, requires more breadth, more large features, with less of fine detail, than a similar ornament to be viewed in a strong light, and at short distance. The determination of such things as these is not at all a matter of feeling. Of course, in decoration, what it is always proper to do in a particular case is not always the best thing to do, and so there is ever an abundance of room for the exercise of æsthetic judgment. Between what is positively good and what is positively bad, there is a wide debatable ground, with which the teacher need not concern himself. He need not, for example, undertake to show just where science ends, and art begins; just where decorative art passes from its own proper domain into that of pictorial art; just where industrial art and fine art diverge, each taking a different road: nor need he take part in the "battle of styles," though he should and can teach style, or attempt to say just how much attention should be paid to the precise rendering of minute details. These will always be subjects for endless discussion among those who delight in things of that sort. It is well to remember that there is nothing singular in the debatable questions which have been mentioned. The naturalist, for example, finds objects he cannot affirm, with positive certainty, to belong to the animal or to the vegetable kingdom, to this species or to that. The linguist meets with the same puzzles. But, after one has made due allowance for all debatable matters, there is much relating to decorative art that can be taught with absolute positiveness.

THE HUMAN FIGURE.

Even when we come to the artistic treatment of the human figure, we find four fundamental preliminaries, which can be taught with sufficient exactness to satisfy educational considerations. They are, the anatomy of the figure, the attitude or action of the figure, the elements of facial expression, the massing of the figure. It is by study of the skeleton that the ground knowledge of the proportions of the human figure and of the foreshortening of its parts, also of attitude or action, as indicated by sitting, standing, walking, running, dancing, can be best acquired. This knowledge of its internal structure and varied movement is the only true basis for the artistic representation of the human figure. Facial expression is largely a matter of lines. Hence it is by a careful analysis of the face, by studying it line by line, that one can best learn to distinguish, first in extremes, then in gradations, between anger and laughter, compassion and scorn, grief and joy, fear and confidence, vanity and pride, and so on to the end of the alphabet of character. The effect of each line when considered by itself must be noted, must be learned with the most rigid precision. It is easy to be seen in the study and representation of character, that the learner should, for pedagogical reasons, draw 1, from flat copies, 2, from the cast, 3, from life. When one comes to the artistic representation of the whole figure, it is proper that he attend first to the masses or grand divisions, and not advance a step further until these have been properly rendered. To facilitate the study of the figure by masses, and to make the study severely accurate, the masses should be first treated as rigid geometrical solids, perfectly preserving the proportions and action of the figure. With the masses of the figure correct, then and only then is it time to attend to the variable details of nature. No matter how exact may be the rendering of the details, the whole result cannot be good, if the rendering of the masses of the figure is wrong and the action faulty.[1] Now, it is not at all a

[1] Mr. F. D. Millett, from the Antwerp School of Art, was one of the Massachusetts Commissioners to the Vienna Exposition. In his report on "Fine Arts of the Present Times," he makes the following remarks about the treatment of the human figure: —

"No arguments are necessary to prove the value of a general indication of

matter of vague feeling, — this preliminary study of the human figure: what there is to learn is of a rigidly precise character, and altogether teachable according to ordinary pedagogical methods. Yet the artist who lacks this knowledge lacks that which is essential to the highest success in the representation of the human form and spirit, in activity or repose. However delicate his æsthetic feeling, he can never be a master of his art.

But such a view of the proper method of beginning to study the human figure for artistic purposes implies a deal of preliminary work, of drudgery some may call it, before results are reached. That, however, is true of other things, — of law, medicine, engineering. Results are reached in these things only after long, laborious study. There are those, indeed, who, laughing at study, rely upon inspiration, upon the vigor of their untrained genius; or more, perhaps, upon the credulity of the public. Such are called quacks in medicine, pettifoggers in law. Is there not also danger of quacks in art, if hard, systematic study, if foundation principles and rational beginnings, are ignored? In the artistic study of the human figure, to begin with the cast is to begin where the master left off, and to begin with the living form is to begin with nature's elaborate product. The learner, in the first instance, ignores all the preliminary steps taken by the

the character, as opposed to neglect of grand lines and movements in the elaboration of minutiæ. A few charcoal lines, giving the direction of the members, and indicating in the simplest way the action of a figure, are more indicative of the impression the figure makes upon the spectator, than the most carefully studied drawing of the same object, where the grand lines fail and the action is faulty. Any one who has drawn the figure knows the value of the first few strokes, indicating, not the sum-total of the impression made on the mind, but the characteristics of it. Then, in teaching, show the beginner the grand movements of the body, the most characteristic contours, and the just relation of the masses; instruct him how the branches vary in different species of trees, how the foliage is massed in each, and everywhere insist on grand character and simplicity. The importance of detail is, in general, the uppermost idea in the beginner's mind, and the instructor will rarely have to insist on this quality in beginners' work. As for finish, this acquirement comes of itself: certainly enough skill in this direction will be gained by the pupil long before he has learned the grand lessons of his profession."

Any person familiar with the general principles which are regarded by the best educators as underlying all good instruction, no matter what the subject taught, would say at once, though he had never drawn a line in his life, that the general principles enunciated by Mr. Millett must be correct. All other things, when well taught, are taught in the same way: first the masses, then the details. Thus it is with history, with grammar, with geography, with arithmetic even, with botany, with zoölogy, with chemistry.

master; in the second, he ignores all the formative processes of nature.

Mention has now been made of a few essential elements of art knowledge, — elements which can be scientifically treated, and therefore taught with that precision demanded by sound educational principles. It will be observed that industrial art and fine art have, in the main, the same elementary basis; hence that whatever promotes the former must promote the latter directly or indirectly, — directly by educating the artist, indirectly by educating the public taste and judgment. But, while industrial art leads to fine art, the latter exerts a reflex influence upon the former, because it elevates the public taste, and because the instruction specially required by fine art often proves of service as a discipline to the artisan. Thus the drawing of the human figure is an excellent discipline for the artisan because of the subtle training which it affords the eye and hand. But to make the human figure the foundation of all art, to expect, for example, by persistently drawing it fully to develop the power of seeing, or to produce a good industrial designer or decorative artist of any kind, is the height of educational absurdity.

HOW CAN INSTRUCTION IN ART BE BEST GIVEN?

Finally, how can instruction in the teachable elements of art be best given? The answer shall be brief, — so brief that it will perhaps appear dogmatic. As the whole people should be reached, the means must be adequate to the end desired. There must be books, drawing-copies, models, casts, and, for some of the advanced work, special school accommodations. The forms given to be drawn, whether flat copies or solid, should be scrupulously exact, should have pronounced character, and, if they are to affect the taste, should be as beautiful as it is possible to make them. They should, of course, be graded according to sound educational principles. Then the forms to be drawn, especially in the earlier stages of each department, should be accompanied by a printed text, on whose preparation the utmost care should be bestowed, to the end that not only the requisite information may be given, but that all inaccurate and slovenly use of language may be avoided as in the preparation of a grammar, rhetoric, or other school-book.

A carefully prepared text is thus insisted upon, because it is seen that at the foundation of all art there lies a great body of facts and principles, which can be described in language, and must be so described in order that they may be learned. If this verbal description is possible at all, — and no one will deny it, — then it is possible to be made in printed language which will crystallize the statement of facts and principles for universal and perpetual use. Whenever the learner fails to comprehend the text, or special circumstances require that more should be said, then the text must be supplemented by oral explanation from the teacher. A good text and a good teacher are much better than either alone. Those who look upon art as a mere matter of feeling, who do not acknowledge such a thing as Art-science, will, of course, see no use in such a text as described, though they would applaud a printed rhapsody on art that was calculated to produce a tumult of indefinable feeling in the bosom of the learner. Teachers are another essential thing, and they must be numerous enough to do the great work required. What should be their qualifications? First, they should possess general teaching ability; second, a knowledge of the teachable elements of art. Hence artists as artists are not required; of course there can be no objection to them, provided they also know how to teach. If they lack the teacher's gift, they will inevitably fail. Whoever, therefore, can learn teachable things, and having learned can impart their knowledge to others, are the ones to give instruction in art. The more, indeed, they know beyond what they are required to teach, the better. Hence, to disseminate an elementary knowledge of art among the whole people, the instruction must be given by the regular teachers in the public schools. To say, as some do, that we can have no good instruction in art until we have great artists for teachers, is the same as to say we can have no good instruction in arithmetic, in grammar, and reading, until we have the pupils in our public schools taught by great mathematicians, great poets, great orators. There are probably thousands of primary teachers in this country who can teach the elements of drawing better than could Raphael, just as Sherman probably had hundreds of sergeants in his army who could drill a company better than himself. Give the regular teachers in the public schools the

means to work with, make the study of the elements of art as of mathematics compulsory, and good results will surely be secured.

But what of more advanced instruction in both industrial and fine art? This must be given in well-appointed art-schools, otherwise it can be made neither so general nor so good as it should be. Were Massachusetts, New York, Pennsylvania, and Illinois as well supplied with these schools as England, — that is, for each 210,000 inhabitants one school with 190 students, — Massachusetts would have 7 of them, New York 20, Pennsylvania 17, Illinois 12; which would give the four States a total of 57 schools, with 10,640 students. These schools, supplied with all necessary means for their work, should be in the charge of persons who possess a thorough knowledge of the teachable features of the subjects of instruction, and who, in addition to this knowledge, possess the ability to impart, in the most rational way, what they know. But it will be vehemently urged by some, that this teaching of the schools cannot be effectual, that old practices should be followed, that art-students must get their training, if it is to be of any value, in the studios of great artists, as formerly was the fact. To this there are several objections; but one, which is all-sufficient, is enough to name: the large number who ought to be taught, and in various things, cannot be reached by such a mode of procedure. This studio instruction, excellent in many points, was essentially an apprenticeship under the old masters. Now the times have so changed that apprenticeship has, in obedience to natural causes, nearly or quite disappeared from all industries. In a similar manner, to meet the rapidly increasing and varied demands for art-instruction, the school must, in the main, supplant the private studio, doing the work required better than the private studio can possibly do it. But, again, it will be vehemently urged that art-instruction, which is limited to the things that can be taught with pedagogical precision, will never produce a genuine artist; that there must be a certain something which a student can obtain only by working under a great master. It is indeed true that a knowledge of the precise and teachable features of art is far from enough for the making of a genuine artist; but it is also true that there can be no genuine artist who has not this knowledge, which is all that even the greatest master can impart.

The power which a great artist displays in handling the teachable elements of art, and in producing his wonderful results, he cannot impart to any one: that is something which must "exist in the man, in the subject, and in the occasion," as Webster said of true eloquence. The great artist is distinguished, not for disregard of the precise and teachable principles of art, but for his power, for his genius, in using them; and that is something he cannot confer upon another by teaching, not even if he were no less a teacher than artist. A great master may, indeed, impress upon the work of his students, especially if they possess inferior powers, some of his own characteristics, making of his students imitators, and thus founding a "school." This, however, is not true teaching, since its result is imitative, and not rational. An art-student should, upon leaving his instructor, be so well grounded in the *rationale* of his art, that he can pursue an independent course. With this power the students who studied under Agassiz left their instructor; hence they are turning out Darwinians, though Agassiz himself fought Darwinism to the last. It is not mere reproduction of the past that we want either in science or art, but a rational use of what we have received from the past. As we increase our knowledge of the poetic art and our taste for poetry by reading Homer, Milton, Shakspeare, and do not care to have them further than this for teachers; so the main advantage to be derived from great artists must come through a study of their works, which can be collected in art schools, galleries, and museums. In this way they can teach, silently, most invaluable lessons. Yet it is not an attempted reproduction of these we want. Indeed, we want the art of no man, no country, no age; even if we did, we could not obtain it in its essence. What specially characterizes the art of any man, country, age, being a natural growth, the product of special circumstances, and not an artificial creation, is not, in its essence, transferable; and the attempt to transfer always results in pinchbeck imitation. This fact they will discover who talk so loudly about French art, and so vehemently urge its cultivation in this country. Whatever there is generic and teachable about French art belongs to all art and to human nature; that we want: whatever specially characterizes French art, being the product of French life, will always remain French and untransferable.

We do not want that: we want an art of our own, and we shall surely have it one day, as fine as the world has yet seen, original, springing in its characteristic essence from the soil, from American civilization. Like all good art it will be rational, not a caprice, not a trick; it will be founded on those general principles which are teachable, which underlie all art, which can be learned by the people, and when learned will enable them, if not to produce great original works, at least to comprehend and enjoy the highest achievements in art.

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INTRODUCTION.

The universal importance of instruction in drawing was not fully recognized until the products of the arts and industries of the various nations met each other at the World's Fairs. It then became evident, that most raw materials receive their value in social interchange through form only; and that therefore the education of form, according to æsthetic principles, is the first condition for the successful development of industry, as well as for the elevation of taste in general. The first powerful impetus toward a reform in art-instruction was given at the London Exhibition of 1851, where the products of industry from all parts of the world were brought together for the first time in an international tournament; and England herself then proceeded, through the instrumentality of drawing-schools, to regulate taste, which had long been subject to caprice, in accordance with scientific maxims; to introduce uniformity into the treatment of the matter of form, and to give to its development a basis resting upon æsthetic principles. The industry of France, which until then had proceeded without principle in the matter of style, allowing itself to be swayed by external influences, and dazzling rather by the brilliancy of its manual dexterity than by virtue of its positive artistic merits, presently found that it must also enter into this reform, if it did not wish to see its productions seriously endangered in the markets of the world. For the example set by England was followed by Austria, by Germany, in part at least, quite lately also by Russia; and everywhere these efforts were accompanied by the best results. And, simultaneously with the growth of art-instruction during the last decades, art-science[1]

[1] *Art-Science*, the German "Kunstwissenschaft," is a word which has hardly been naturalized as yet in the English language. It embraces all that may be known respecting art, — its history and its philosophy, as well as its technical detail. Art-science, which is a creation of modern times, seeks to impart to the study of art as much of the method of the exact sciences, as the nature of the case will permit. It therefore proceeds empirically; and its activity, in searching through archives to obtain documentary evidence con-

likewise expanded its wings more and more powerfully, and contributed not a little towards the elucidation of the æsthetic conceptions of our time.

The world followed this revolution in industry with increasing interest, at the subsequent exhibitions which have been held in the course of the past twenty years at Paris and at London; but on these occasions criticism was compelled to judge by *results* only, as the *causes* of the revolution, which are to be found in instruction, could not be investigated, for want of the necessary material. This demand was, however, fully satisfied by the World's Fair of 1873; as nearly all the states represented in the domain of industry were also represented in the department of art-education, and each state had endeavored to illustrate the efforts it is making in this direction.

In working up the vast material displayed by the various countries in the shape of specimens by the pupils, aids for teaching, &c., the reporter found himself compelled to notice also the achievements of industry as forming the actual starting-point of the efforts under review; and he believes himself to be all the more justified in this transgression of the limits of his department, as it presented the only way by which a correct judgment on the subject of instruction could be arrived at.

By far the greater part of the objects exhibited in the section allotted to the reporter had reference to art-industrial instruction. The rest pertained to the general schools in which art-instruction ought to be made an integral part of general education, and drawing should be used to awaken the æsthetic feeling more universally than heretofore. As this problem is still everywhere waiting for its positive solution, and as our own time, more than any other, is strenuously at work upon its elucidation, the reporter has endeavored, as far as possible, to show the present position of this branch of instruction in the various countries. Next to the laws, enactments, &c., concerning the subject, he has therefore directed his attention principally to the forms and the methods employed in its study. A short characterization of the copies, models, &c., in use may serve to complete the picture.

The reporter believes it unnecessary to call attention to the fact, that

cerning the lives and the works of the artists of the past, has been marvellous, especially of late years. It also lays great stress upon the comparative study of art, and has therefore been of great service in the elucidation of the question of style, not only in its application to nations and periods, but also to individual artists. Its ultimate aim must of course be, to deduce those general laws, which will enable us to comprehend art in its essence and in its historical development.— *Transl.*

his department, looked upon from the point of view just designated, is one of vast extent; and he must ask indulgence, if here and there he has not done justice to his task. As it was frequently impossible to obtain other than insufficient information concerning the deficiencies of the Exhibition, he must also be excused if some parts of the report should appear to be more broadly treated than others.

The remark already made in other reports must be repeated here: viz., that the enormous dispersion of the materials rendered the task infinitely more difficult. The character of Groups XII. and XXV.[1] frequently caused a dismemberment of objects of Group XXVI.,[2] which ought to have been together, thus frustrating the *coup-d'œil;* and, in matters of education, there were added to this difficulty the separate exhibitions in the schoolhouses, where fragments of the various aids for teaching had likewise to be looked for. Nevertheless, the reporter believes that he has recorded many things which may in future be of value to the highly important subject of education.

It is self-evident that the great industrial powers, such as France, Germany, Austria, England, and Italy, had to receive a more detailed treatment than the other countries, in which the efforts in question are of less importance. If, as far as Germany, and especially France, are concerned, the past has been drawn upon to a greater extent than the programme of the "Official Report" seemed to demand, this may be justified by the fact, that there was a defect in this respect in the discussion of our subject in the reports on former World's Fairs; and that it appears important, in view of the current of the present day, to throw some light upon the sources of the traditional elements of art-industry.

[1] *Group XII.* embraced "Graphic Arts and Industrial Drawing;" *Group XXV.*, "Works of the Fine Arts of the Present Time."

[2] *Group XXVI.*—"Education, Teaching, and Instruction."—*Transl.*

ART EDUCATION.

AUSTRIA.

Whoever compared the results of instruction in drawing in the Austrian People's and Middle Schools, with those attained in the schools of a similar category in other countries, was forced to admit, that, on the whole, this subject is cultivated much more carefully and much more successfully in Austria than elsewhere. Even in the relatively short time which has elapsed since its introduction into the scheme of education, the methods of teaching have very generally shaped themselves in accordance with a uniform principle deduced from experience; and it was noticeable, that those schools took the lead, and shone as models before all others, which have the advantage of superior teachers, who perceive drawing to be an integral part of general education.

Drawing in the Austrian schools, like every thing that is new, had to pass through the phases of childhood, had to become naturalized among the existing subjects of study, and had to overcome prejudices, and to struggle against a number of other difficulties, before it succeeded in gaining a solid basis upon which to erect a superstructure of well-defined proportions. Art-science, industry, and instruction in drawing, have almost kept pace with each other in their development in Austria (where Vienna is looked upon as a common centre), since about the year 1850. Industry demanded forms, art-science pointed them out, and drawing stepped in as a bridge, as a connecting link between the two. The reform for which taste was prepared by these agents could only be accomplished by the aid of the drawing-classes; and as the industries

demanded this reform on the one side, while art-science endeavored to carry it through on the other, drawing necessarily became the central point of the theoretical, as well as of the practical elements of art-education. With the international combats which took place at short intervals in the arenas of the World's Fairs, between the products of art, of industry, and of education, the factors from whose co-operation true progress can alone be expected, approached nearer and nearer to each other, and the current increased in rapidity. What Austria mostly stood in need of was a common centre for the reformatory movement. England secured such a centre in its South Kensington Museum, with the Art-School attached to it; the principal cities of France and of Germany are struggling to attain the same end; Russia reached it when she established her Museums and Art-Schools at Moscow and at St. Petersburg; and Austria has also seen her wishes realized by the establishment of the "Museum of Art and Industry" at Vienna.

With the improvement of educational matters in general, which has been effected in Austria within the last ten years, drawing in the schools for general education has gradually been brought nearer to its real destination; and in this respect Austria had the advantage of other states, as the subject had always been compulsory in her Real-Schools.[1] For, although these schools had formerly aimed principally at technical education, drawing had obtained a sound basis in them, and the methods of teaching had had time to define themselves in the course of a number of years. On the part of art-science, the higher importance of instruction in drawing was also urged with constantly increasing emphasis. It was contended, that it must not only serve technical and industrial interests, but that it has a greater mission, the education, namely, of our younger generation to the understanding of the language of form in general; the unlocking of their eyes to the beautiful in art and in nature; and, as a consequence, the cultivation of the intellect, and the purification of taste. The establishment of the Real-

[1] *Real-Schools* are so called because they are intended to teach the "Realities," i.e., practical science and modern languages, which enter into the real uses of practical life. The "Gymnasia," on the contrary, are principally devoted to classical philology, and are simply preparatory schools for the universities. — *Transl.*

Gymnasia,[1] in which this humanistic aspect of drawing was destined to receive a more prominent recognition, thrust the question further into the foreground; and the Real-Schools likewise demanded its solution, when their re-organization in favor of the humanistic branches was effected in 1870.

According to a proverb, all roads lead to Rome, and whoever is clearly conscious of his aim will reach it sooner or later. This winged word is most frequently made use of in art, in which, indeed, the individual element is generally more prominent than elsewhere, although *one* common aim is striven for by all, i.e., *truth*. It is different, however, with systematic art-instruction in schools; certain well-defined tendencies are to be realized here, and fixed standards are therefore an absolute pedagogical necessity. Not artists, in the proper sense of the word, are to be educated, but trained thinkers, who shall have the faculty of conceiving not only in time, but also in space; and who, by practicing art, are to be fitted to understand art. In shaping the laws upon this subject, experience has always made its influence felt in Austria; and, in reviewing these laws from about the year 1850 to the present time, we can see the plans of instruction becoming gradually more definite, and we can trace the efforts that were made to introduce unity into the methods of teaching. The last enactment on this subject is dated Sept. 1, 1873, and contains the detailed plan of instruction for freehand drawing in the People's and Middle Schools in accordance with the tendencies above specified.[2] As the main stress in this enactment is laid upon drawing from plastic models, it must now be the concern of the government to provide the schools with the apparatus necessary for this mode of instruction, — a point which was also emphasized by the "Art-Scientific Congress."[3] The experience which has lately been gained

[1] *Real-Gymnasia* are a combination of the Real-School and of the Gymnasium. The lower classes are common to all the pupils; but in the upper classes a bifurcation takes place, one branch following up the aims of the "Real-School," the other those of the "Gymnasium." — *Transl.*

[2] Compare the report of the Ministry of Education on the collective exhibition of Austrian education, p. 409, *et seq.*

[3] *The Art-Scientific Congress* met at Vienna in the early part of September, 1873, and was attended by about seventy delegates from Germany, Austria, Hungary, Italy, Belgium, Switzerland, Spain, and England. After an address of welcome by the Austrian Minister of Education, v. Stremayr, the meeting

at the World's Fair in regard to art-instruction will no doubt be conducive to the propagation of correct principles. And the reporter must here beg to be allowed to define, in rapid outlines, the point of view to which he has attained by his own pedagogical experience, and by the insight into the results of the various educational institutions represented at the Exhibition.

The world, as far as it is concerned in drawing, is probably unanimous in the conviction, that instruction in its first stages must begin with geometrical forms, and that ornament must be practiced to a certain degree, before figure-drawing can be taken up. Differences of opinion have reference to the method only; i.e.: How shall the several parts be taught? what shall be their proportion? and what models shall be employed? The ornament, as long as it remains ornament in the truest sense of the word, and does not go astray among the variable forms of nature, as it did during the Baroque epoch, always constructs itself according to a certain rhythmical measure, which gives law to the form. The characteristics of the various styles lie in the nature of this rhythmical development, in the peculiarity of the growth of the ornament, as it were; and it is therefore an inevitable necessity in instruction, if the pupil is to receive an insight into the organism of this world of form, that the teacher himself should develop the forms, i.e., that he should draw them on the blackboard before the class. But by no means must the welfare of æsthetic education be sought in the mere knowledge of all the existing styles of ornament. General culture will demand this knowledge; but the development and perfection of æsthetic culture can only be induced by the study of the best thus far produced by the nations of the globe; and in the choice of examples for educational purposes the Grecian, Roman, and Renaissance monuments will claim attention above all others. Besides these, however, nature, as the source of all ornamental forms, must likewise be considered.

But as ornament, although not a lifeless, is still a soulless formation, and its study in schools for general education can only be

organized by the election of Prof. R v. Eitelberger as president; Messrs. J. A. Crowe (joint-author with G. B. Cavalcaselle of the "History of Painting in Italy") and Schön, as vice-presidents; and Prof. Bruno Meyer and A. Ilg as secretaries. The meeting was the first of its kind ever held; a second meeting will occur at Berlin, in September, 1875.—*Transl.*

looked upon as a technical preparation for the comprehension of art, it follows, that the pupil, as soon as he is able correctly to reproduce these "Forms in Rhythm," will have to take up the truly educational study of the more intellectual human form. Here, through forms, he will make the acquaintance of souls, will learn to distinguish characters, and at the same time will become familiar with art in its masterworks, while acquiring technical execution by the study of well-chosen models. All the French drawing-copies lately published start from this point of view, and our time possesses an invaluable aid in this respect, in the photographic facsimiles. The road in figure-drawing must lead from the characteristic, the glaring, the striking, to the classical repose of the antique. The forms of a Phidias would be as little in place in the first stages of figure-drawing, as the works of Sophocles or Æschylus in an elementary reader. And in those schools where, in spite of these truths, instruction began with the antique, figure-drawing remained only ornamental drawing of another kind, while a more delicate comprehension of the nature of man, a penetration into the soul, was made impossible. The way for the antique must be prepared by the masterpieces of the fifteenth and sixteenth centuries. Leonardo's Apostles, Raphael's heads from the Camera della Segnatura, &c., are models, which in their forms are more akin to the imagination of youth, because they are creations pulsating with life. It belongs to a higher stage of development to comprehend the beauty of the Zeus Otricoli. Although anatomists and artists, in times gone by, have repeatedly endeavored to construct the human figure according to a definite canon, and to create an ideal of proportions which might serve as a basis for æsthetic conceptions, art has never consented to accept these theories, nor must they be accepted for instruction. If proportions are to be spoken of in figure-drawing, they must be confined solely to the laws of growth of the bones, to the definite anatomical principles, in which modern investigations in this science have given such beautiful results for art; but all shallow general receipts, which are at variance with the laws of nature, must be kept away. Indeed, nature still infolds many secrets in her variations, which cause the intellect to reflect in youth, at the time when impressions are most vivid, and receptivity is at its height.

The real purpose of figure-drawing in all its stages will therefore be, to learn how to perceive the *intellectually individual* in the forms of nature. To no teacher in any other branch is it given in the same measure as to the drawing-teacher to occupy himself with each one of his pupils individually. The weaker pupil of slower progress can be brought up to the aim quite as correctly, pedagogically, as the one of more talent; since that which is to be taught, as soon as the hand of the pupil has attained to freedom by elementary ornamental drawing, lies in the finished examples, and the exposition by the teacher accompanies the correction. Here he can be guided by the individuality of the pupil, and can at the same time pay due attention to æsthetic and art-scientific interests.

The reporter believes himself justified in referring to the report made by Prof. Prandauer and Councillor E. Walser to the Austrian Ministry of Education,[1] as far as the review of the work done by the pupils of the People's, Citizens', and Middle Schools is concerned, as in the main a repetition only could here be given. A short sketch of the observations made may suffice to convey an idea of the general character of the specimens exhibited.

Very correct principles are generally followed in the People's Schools; and, besides the Vienna schools, some of those of the larger provincial towns had sent specimens which were models of their kind. The fact that the "making of pretty pictures" is still in vogue here and there (principally in Styria and farther South), is only owing to the want of capable teachers, having the necessary preparation in drawing. These evils are best corrected by the introduction of stigmographic copies,[2] which have done very good service in a large part of the People's Schools of Bohemia, under the charge of teachers totally ignorant of drawing. Efforts to carry through the only system recognized as correct in the first stages of instruction — i. e., that passing from straight-line ornamental figures, to freehand outline ornament — are most satisfactorily apparent everywhere; and the activity which the Austrian teachers

[1] Vol. ii. p. 127, *et seq.*, and p. 405, *et seq.*

[2] *Stigmographic copies* are those in which the leading points of the figure to be drawn are indicated by dots, between which the lines are filled in by the pupil. — *Transl.*

have developed in producing the requisite copies, deserves honorable mention. Numerous works following the correct principle, and therefore showing but unimportant differences, were exhibited in the shape of unpublished drawings, alongside of others already published. In the first stages of instruction the stigmographic method is frequently employed with good success.

In the Citizens' Schools drawing is carried on less uniformly, and the choice of examples in some of these institutions, especially in Bohemia, is to be censured; on the contrary, the Moravian, Silesian, and Austrian schools of this class exhibited mostly good work.

In the Training-Schools for Teachers, where stress must be laid above all upon outline ornament, and where blackboard-drawing in this branch must be practiced, due attention is generally paid to these requirements; but old copies of ornaments without definite style are still frequently in use, and sometimes shaded heads are drawn from old French examples, which tend to hinder the study of exact form, rather than to advance it. The German Training School for Teachers, of Prague, exhibited the correct course of instruction in a most exemplary manner by means of work done by its pupils.

Nearly all the Real-Schools were represented by superior specimens, those of Vienna taking the lead. The methods of teaching are pretty much the same everywhere, showing only minor differences which are owing to the individualities of the teachers, and frequently also to local circumstances. The better of the later French drawing-copies, as well as the models, &c., published by the Austrian Museum of Art and Industry, have been introduced very generally. In the Bohemian Real-Schools, which are still organized according to the old system, architectural and topographical drawing are still carried on to excess. The results of freehand drawing were good on the average; but it was remarkable, that, for the drawings from casts in two crayons, paper of much too dark a color had been chosen almost throughout, which allows only of a hard and constrained rendering of the forms. In the choice of technical means, the French must still serve as models to all the world.

Many of the schools, prominently among them those of Prague,

had also made a clear exhibit of the course of instruction. A few of the institutions of Eastern and North-Eastern Bohemia had, however, misapprehended the purposes of the exhibition, and had sent show-pieces, among which the most monstrous mistakes were occasionally to be found in regard to taste, and the pedagogical training of the feeling for forms. As a general thing, ornamental drawing is prosecuted more correctly than figure-drawing, a state of affairs which is but too often occasioned by the absence of good copies. Outline studies of naturalistic treatment, for the first stages, through which the pupil might gradually be led towards the tempered beauty of the antique, are still wanting everywhere, as has been observed before. The road through Julien's "Etudes d'aprés l'Antique" does not show favorable results. The forms in themselves are too insipid to be able to stimulate, and the execution is too mannered to be useful in this respect. Execution, in figure-drawing especially, by reason of the great variety encountered in it, is very difficult to acquire by empirical study, while description alone can never lead to its comprehension. It is therefore doubly necessary that the best models should be provided. The success attained when good drawings by the teachers, or photographs from such, had been made use of, was often astonishing. Thus far the "Cours de Dessin," by Ch. Bargue, second part, is the best that can be recommended for the study of execution in the higher classes.

In the Real-Gymnasia a great variety is still observable in instruction in drawing. In the Viennese institutions, the results equal those of the lower Real-Schools, although there are great differences in regard to the proportions of ornamental and figure drawing.

In other institutions the course of instruction of the Real-Schools is, indeed, adhered to; but, as the subject is elective for a part of the pupils in the higher classes, the system is mostly dropped, and the more pleasant is preferred to the more useful.

Of the Industrial Improvement Schools,[1] the Viennese more espe-

[1] *Industrial Improvement Schools* ("Gewerbliche Fortbildungsschulen") are described as follows in the "Official Catalogue of the Exhibition of the German Empire," at Vienna: "The Industrial Improvement Schools are intended to continue the education of those of the pupils of the People's and Real

cially were represented by very excellent specimens, in drawing as well as in modelling. They are just now undergoing a reform, and will probably be freed from some of the difficulties by which they were beset until now. Through the agency of the preparatory classes now in course of organization, the pupils will be better fitted to enter these schools, which will henceforth occupy the position of higher classes; and it is to be hoped that the irregularity in the attendance, which has frequently been complained of, will be checked by suitable measures on the part of the authorities.

Of the Industrial Schools proper, only a few were represented in the Collective Exhibition of Austrian Education, by specimens done by their pupils. Among these the Building and Machine Trades School of Vienna, and the Industrial School of Prague, were the most prominent. The larger part of the special schools proper, being subventioned by the Austrian Ministry of Commerce, exhibited in the Pavilion of the Commerce of the World. As they were not included in the report of the Commission on the Collective Exhibition,[1] their achievements must receive a more detailed treatment here.

The industrial department formed Group VI. of the Exhibition made by the Ministry of Commerce; and, of the schools under consideration, a map had been prepared which showed their local distribution throughout the Cisleithanian Crownlands. By this map it became apparent that, so far, the North of Bohemia pos-

Schools, who devote themselves to practical labor. The selection of the subjects taught is entirely governed by local circumstances. The number of teachers rises from a few up to fifty in one school. These teachers are partly regularly trained pedagogues, partly specialists, such as engineers, merchants, manufacturers, or artisans. . . . The hours of instruction of all these schools are outside of the ordinary working-time of the shops. The schools of the more important cities also offer opportunity to practice during working-time, in schoolrooms especially appointed for the purpose, and under the supervision of teachers who come and go occasionally. The attendance is voluntary, and dependent upon the payment of a small tuition fee The expenses of the schools are borne one half by the state, the other half by the communes." This description applies more especially to the schools of Wurtemberg, but will answer for all. — *Transl.*

[1] With the exception of the Manufacturing Drawing School and the Building Trades School of F. Märtens in Vienna.

sesses the most of these institutions, Silesia and Moravia ranking next, while throughout the other crownlands (with the exception of Galicia) their relative distribution is tolerably even.

Tabular statements, which had also been provided, gave more detailed information regarding the establishment of the several schools, and showed, that, previous to the year 1872, there were only ten in the whole realm, — at Reichenberg, Steinschönau, Vienna, Bielitz, Brünn, Aussig, Haida, Gablonz, Hallein, and Asch.

Since the year 1872, there have been established twenty-three new schools, — at Rumburg, Graz, Rietz, Znaim, Innsbruck, Imst, St. Ulrich (in the Grödenthal), Gablonz, Hochstadt, Landskron, Rochlitz, Rothmühl, Gmünd, Tachau, Walkern, Mondsee, Zwittau, Hallstadt, Graslitz, Schönbach, Petrowitz, Carlstein, and Hohenelbe.[1]

The following is a short sketch of the results of the several institutions:—

School for Glass-Industry at Steinschönau (established 1855). — In the general school drawing is carried on in three groups (or stages), as follows: Group I. Composition of ornaments on the basis of geometrical forms (linear drawing); Group II. Composition of ornaments in Gothic style, to fill given spaces (leaves treated as ornaments with the pen); Group III. Renaissance ornaments. In the section for apprentices, besides elementary ornaments, there are practiced flowers from French originals, and the "Renaissance Intarsias" published by the Austrian Museum, but more especially forms of vessels (from various museums); also figure-drawing (after Julien). In the section for masters and journeymen, drawing is continued in the same manner, and most superior specimens were to be seen, in drawing as well as in modelling. The glass vessels exhibited were likewise very tasty, and gave evidence of a gradual abandonment of the old French style, and of a return to the Renaissance. In the People's School of the place, which should prepare for the special school in elementary drawing, the system pursued is unfortunately not the correct one; compass and ruler are employed in part, and landscape drawing is also cultivated.

[1] A large number of similar institutions will again be opened in the course of the present year (1873).

The Drawing and Modelling School for Glass-Industry at Haida (established in 1870) exhibited specimens, in drawings as well as in objects practically executed in glass, which were quite superior. The institution certainly has great talent at its command, and it only remains to be desired, that instruction should be given more systematically. Unfortunately ornament is again insufficiently cultivated in the lower classes of the City School of this place, and landscape and flower drawing is taught from the objectionable copies by Hermes. The more talented pupils will finally attain to technical skill even by this road; but nevertheless they will always remain more or less of amateurs, a fact which was made apparent even by the more important specimens of the apprentices and journeymen of the special school under consideration. Flowers are well copied from French examples; but the correct understanding of lights and shadows is generally wanting, as there is too little drawing from casts. Julien's heads in two crayons are also in use, and some of them had been copied in a truly brilliant style; but the comprehension of form is not advanced by them. Some small heads in water-colors (likewise from French examples) were copied with a great deal of technical skill. The flower-pieces, from color prints, are also entitled to unstinted praise, as far as the execution goes. The school still adheres to French taste; it needs good examples of modern tendencies.

Drawing and Modelling School for Clay-Industry at Znaim, (established 1872). — The institution is still in embryo, and it is very natural therefore that the results were moderate. The course of instruction and the originals in use are good.

The Drawing and Modelling School for Glass-Quincaillerie (fancy goods) *at Gablonz* (established 1870) was represented, on the whole, by very creditable productions; the models and copies in use (mostly from the Austrian Museum) show the modern tendencies. There were also pretty flower and landscape drawings (Calame). The only defect to be noted relates to the execution in drawing from casts; the drawings are made with crayon on white paper in line-manner, and figure-drawing is taken up too soon. The practical results of the institution merit full recognition. Since 1872 a special school for the chemistry of glass has been united with it.

The School for Woodcarving at Gröden exhibited ornamental carvings, and a "Christ on the cross," perfectly correct anatomically.

The Training-Shop for Woodcarving (of Sebastian Steiner) *in Innsbruck* (established 1872) was represented by ornamental pieces — animals and smaller figures — which left nothing to be desired in the technical mastery of the material, but were treated entirely in the traditional Swiss style.

Training-Shop for Wood-Industry in Imst (established 1872).— The effort to attain style is perceptible in the ornaments, but the forms are somewhat heavy and flat. Very pretty figure-studies were shown; and it is worthy of praise, that antique models have been selected.

The Woodcarving School at Mondsee, and the *Special School for Woodcarving and for Marble-Industry at Hallstadt*, are young institutions as yet, and must for the present cultivate elementary drawing, of which very respectable results indeed were shown.

In the *Woodcarving School at Hallein* (established 1871) drawing is taught in two divisions; ornament (according to Herdtle and Taubinger[1]) being treated in Class I., while in Class II. it is continued in light and shade from simple plaster models. In the shading the necessary technical knowledge is wanting; the modelling is quite pretty. In the woodcarvings the naturalistic Swiss style indeed still prevails, but a tendency towards more clearly defined (Renaissance) forms is already perceptible here and there.

The drawings of the *Woodcarving School at Gmünd* exhibited very pretty results in part; but they allowed no insight into the method of teaching, as the most imperfect productions were to be seen directly alongside of the perfect.

The Woodcarving School at Wallern (Bohemia), opened only in January, 1873, gave evidence, in the work of its pupils, that the true method in drawing is there followed. The ornaments with the pencil and the pen were correctly and neatly executed; the linear drawings were somewhat weaker.

The School for Wood-Industry at Tachau likewise exhibited

[1] *Herdtle and Taubinger.*— Of the drawing-copies here alluded to, those by E. Herdtle enjoy a very excellent reputation all over Germany. Further information concerning them will be found under "Wurtemberg."— *Transl.*

neatly-drawn ornaments and flowers, as well as diligently executed models of constructions in wood.

The Higher Weaving-School at Gumpendorf (Vienna) had illustrated its course of instruction very comprehensively in the productions of its pupils. The drawings, all of them designs for textile fabrics, &c., invariably exhibited also the manner in which the design must be put upon the loom.

The Women's Industry-Association of Vienna exhibited astonishing specimens. They consisted of flat ornaments and flowers in color, some of the latter, in body-colors, exhibiting a virtuosity and a boldness in the handling, hardly to be looked for from the hands of girls.

The Higher Building Trades School of Ferd. Märtens, at Vienna, is intended to provide the facilities for special training for the mass of even the poorer classes, and of those whose circumstances have left them with an insufficient preparation, but who may still desire to improve themselves. Corresponding to its character as a special school, only those branches are taught in it which are directly conducive to its aim, i.e., the education of efficient master-masons, foremen, clerks of works, &c. The institution consists of a preparatory school, and three special schools, one for masons, another for stonecutters, a third for carpenters. It was originally supported by private means; but in consequence of its success, and to further its development, it was subventioned by the commune in 1868, and in 1872 also by the state. Since then the school has advanced very satisfactorily, the number of pupils increasing steadily; and it has also been perfected in various directions, as regards the necessary auxiliary sciences. The results which were exhibited gave renewed evidence that this well-managed institution deserves the celebrity it has enjoyed for years.

The Viennese *Special School for Watchmakers* deserves mention for its neat linear drawings. Besides these specimens, the institution exhibited only its admirable collection of wall-charts, designed for its particular field of instruction.

Very meritorious results were shown by the *Mechanical Training-Shop at Klagenfurth*. The beginning is here made with the usual practice in geometrical drawing, advancing gradually to simple constructions of parts of machines, and from them progressing

to more complicated objects. Neat little models of machines are likewise to be mentioned with praise.

The Weaving-School at Rumburg (established as late as 1872) exhibited excellent results throughout. The numerous portfolios clearly demonstrated the correctness of the course of instruction, which begins with outline ornaments (Herdtle), and advances gradually to complicated flat ornaments in color. The latest and best copies are in use in this school, and special value is attached to the exact study of the various styles. Linear drawing also gave evidence of the best results.

The success of the *Moravian Higher Weaving-School at Brünn* is well known. In designing, Herdtle's ornaments and natural flowers make the beginning, and are followed by the study of the scales of color, nomenclatures, &c., practice in designs with stripes and mixtures, flower-painting in body-colors in specified tints, with reference to their application in printing or weaving, studies for rosettes and palmettos for damasks, pattern-making, &c. In the higher classes there are finally practiced more complicated colored ornaments of all styles, for the various purposes of weaving. It need hardly be said, that masterly productions were to be seen in all these branches, and that the school decidedly holds the first rank in its category in Austria. Mr. George Rödel teaches in this school, and his original designs are mostly used as copies by the pupils. The same tried master also exhibited many of his sketches for textile fabrics, together with his published Schools of Ornament, all of which gave testimony of his eminent fitness for his specialty.

The designs of J. Holfelder for cloth-printing, embroidery, &c., must likewise be mentioned here; they combine the forms of the Renaissance with the taste still existing in France.

Most of the other schools exhibited only practical work, the examination of which does not belong to this department. Of drawings, it remains only to mention the achievements of the *Technical and Industrial Museum* at Cracow, — well-drawn ornaments and heads from casts (in crayon and in charcoal), of brilliant execution, which left hardly any thing to be desired in the way of technical, artistic finish.

It will be seen that the demand for Industrial Drawing-Schools,

as has before been mentioned, is duly attended to in Austria, and their influence upon the various branches of industry will undoubtedly soon make itself felt in a gratifying manner. The success already attained by Austrian art-industry at the World's Fair can only serve as a stimulus to further exertions.

The reporter finally begs to be permitted to touch with a few words upon the activity and the success of the *Austrian Museum of Art and Industry*, since this institution may be said to be the model of all other industrial schools, and may be looked upon as the centre of art-industrial instruction in Austria. The specimens by its pupils were not exhibited within the enclosure of the World's Fair, but in the building of the Museum itself. The rich collections of artistic and art-industrial objects at the disposal of the school, the skilful teachers employed in it, together with the abundant support (in scholarships) extended to the students, necessarily caused a rapid development of the institution. The fact that Industrial and Art Museums can only exercise their full influence on the art-industries by means of schools connected with them, has everywhere been recognized of late; and the organization of our institution, together with that of the South Kensington Museum, can probably be looked upon as models.

It is the business of the school to train skilled agents for art-industry. Consequently those branches of art which have the closest connection with industry are looked upon as the principal subjects of instruction, and have influenced the organization of the school. These branches are: 1, architecture, in its application to the ornamentation of buildings; 2, sculpture; 3, ornamental drawing; and, 4, figure drawing and painting, in their relations to art-industry.

For such of the aspirants to the special schools, whose education is insufficient, there is a preparatory course. A series of technical and scientific auxiliary branches provide the pupils with the varied training which is necessary for the successful pursuit of art-industry. Besides the regular pupils, "hospitants" are likewise admitted for the completion of their artistic education.

The specimens exhibited gave a clear picture of the activity of the several schools, and of the tendencies in the modern development of taste. This point will be treated more fully in another

part of the report, and we will only mention here, that the manner in which the art-school proceeds is exemplary.

The preparatory course was represented by drawings from models of figures and ornaments, and by drawings illustrating the subjects of style, of projection, and of shadows, as well as perspective and anatomical drawings. The special school for figure-drawing exhibited excellent studies from the antique and from the living model, also studies of drapery (in various manners). The school for sculptors presented studies from the antique and from the living model, together with original sketches. Charming designs by the architectural school were exhibited, in connection with drawings from existing art-industrial objects. This section was also brilliant in its practical achievements, especially in furniture, executed by the pupils from their own designs. The school for ornamental, animal, and flower painting likewise exhibited charming compositions. Painting upon wood and porcelain, and painting in enamel, were represented by very successful specimens. The solutions of definite problems (the written problems also being given) for *sgraffito*[1] decorations, &c., by various pupils, were highly interesting.

The development of the art-school in the department of practical work is, unfortunately, still too limited, as the localities at its disposal are too small; and this part of the institution, so important in its influence upon art-industry, will only be able to make itself felt to its full extent, when the new building will be ready for occupancy. The study of the various technical processes

[1] *Sgraffito decorations* being almost unknown in the United States, a few words of explanation may appear excusable. *Sgraffito* derives its name from *sgraffiare*, to scratch or scrape. A layer of mortar which has been mixed with some coloring-matter, to give it a dark tint, is covered with milk of lime. While this upper layer is still fresh, a drawing is executed upon it by means of steel instruments, so that the figures show either in dark lines upon white ground, or *vice versa*. During the Renaissance this species of decoration was frequently employed upon the walls of houses, especially in Upper Italy; and of late years it has again been taken up in Germany, &c., for outside mural decorations. As a specimen the Northern wall of the Polytechnicum at Zürich may be cited, which has been decorated by sgraffitos from drawings by Gottfried Semper. Further information, historical as well as technical, can be found in Lange and Bühlmann, "Die Anwendung des Sgraffito für Façaden-Dekoration," Münich, 1867.

will then receive due attention, and studios will be provided for enamelling, painting upon glass and porcelain, wood-carving, &c.

The second division of the Exhibition contained the artistic publications of the museum, consisting of plaster-casts, galvanoplastic reproductions, and photographs, and the art-scientific works issued since its establishment.[1]

[1] *Art-Industrial Museums.* — The South Kensington Museum which originated in a small way as far back as 1852, having been the first public institution of its kind, has almost eclipsed all other efforts in the same direction; and it may therefore be of interest to glance at the kindred institutions, especially of Germany, which are rapidly springing up everywhere. The conviction is gaining ground more and more, that these museums are an absolute necessity, if German industry is to be able to compete with the industry of England and of France. That it is still in the rear, is freely acknowledged by its best friends; and the rapid advances made by Austrian industry, since the establishment of the Museum of Art and Industry at Vienna, have added a new stimulus to those which were in operation before. The importance of these institutions was also fully recognized by the projectors of the Vienna World's Fair of 1873. A special group (XXII.) was therefore organized at this exhibition to show "*the various methods by which the different modern museums endeavor to carry out the improvement of the general taste of the people, and the manner in which they promote the art-industry and public instruction of their countries.*"

The Museum of Art and Industry at Vienna was established in 1864, and occupied a provisional building, until its present building was completed in 1871, on the 4th of November of which year, the emperor of Austria performed the ceremony of laying the last stone. The Museum is well endowed by the state, and has received a considerable number of donations in money, as well as in valuable articles, from the emperor and from private parties; a society has also been formed "for the advancement of the Art-Industrial School of the Museum," whose principal aim it is to provide scholarships for poor but talented scholars, irrespective of sex, nationality, or religion. The activity of the Museum, under the management of its enthusiastic director, Prof. R. v. Eitelberger, is very great. Travelling exhibitions are arranged all over Austria; and the regular lectures of the school are supplemented by popular lectures given every Thursday evening during the winter, admission free. The Museum is open to the public, without charge, on Thursdays, Fridays, Saturdays, and Sundays; on Tuesdays and Wednesdays, an admission fee of thirty kreuzers (about twenty cents) is charged. Artists and workingmen, however, as well as others who desire to use the collections or the library for practical purposes, are provided with cards, which pass them free even on Tuesdays and Wednesdays. Books may be taken from the library, by giving a receipt for them. The list of the publications of the Museum is quite extensive, embracing books, photographs, casts, and a monthly journal (now in its tenth year) devoted to the interests of art and art-industry (subscription four florins, or about $1.60, a year). The school connected with the Museum has been in very successful operation since 1867.

The first steps towards the establishment of the *German Industrial Museum*

at Berlin were taken by a private association, formed for the purpose, in 1866. In the year following, the society was chartered, and received fifteen thousand thalers from the state to enable it to purchase art-industrial objects at the Paris Exposition. The schools of the Museum were opened on the 12th of January, 1868; and on the 7th of April, of the same year, the collections were thrown open to the public in a provisional building provided by the state. In 1869 a portion of the celebrated Minutoli collection was bought for the Museum by the state, at an expense of fifty thousand thalers (about $37,500); and in 1870 the city of Berlin voted a sum of one hundred thousand thalers, to be applied to the purposes of the Museum, and to be known as the "Frederic William Fund," in honor of the late king of Prussia. Various other collections, donations, &c., were added from time to time. The Museum is now managed conjointly by the members of the society, the state, and the city of Berlin. It receives at present an annual contribution of eighteen thousand thalers from the State; and the latter has also agreed to provide a special building for the Museum and its schools, the cost of which is estimated at eight hundred thousand thalers ($600,000). The collections are open to the public daily, except Mondays, free of charge. The schools are in a very flourishing condition, the number of pupils amounting to 479 in 1874, of which about five per cent were taught free of charge. At the exhibition of the works of the pupils in 1874, thirty prizes were distributed. The Museum has a branch society in Magdeburg, and contemplates the arrangement of travelling exhibitions. Its publications, according to the catalogues of 1873, embrace 261 photographs and 251 casts.

In the same year in which the Berlin Museum was established (1866), a "*Collection of Examples for the Art Industries*" was commenced at Leipsic, thanks to the exertions of the late lamented Dr. A. von Zahn; and in the year 1868 the collection was opened to the public. This collection has now been united with the *Art-Industrial Museum of Leipsic*, which was formally opened Oct. 25, 1874. The Museum is at present housed in rooms rented for the purpose; but the city will probably provide a special building for its purposes, and aid has also been promised by the government of Saxony. For the present there are no schools connected with this Museum; but as the Art Academy at Leipsic, under the direction of Prof. Nieper, has of late years paid considerable attention to art-industrial instruction, the two institutions will supplement each other. All the necessary funds have so far been provided by wealthy manufacturers, and friends of art.

The Bavarian Industrial Museum at Nuremburg, which is closely connected with the celebrated art-industrial school at the same place, publishes an illustrated weekly journal, "Art and Industry" (subscription price, 5 thalers per annum), arranges courses of evening lectures, &c.

The *Museum at Weimar*, opened 1869 under the direction of Dr. A. von Zahn (whose name was before mentioned in connection with the "Collection of Art-Industrial Examples" at Leipsic), lays special weight upon the art-industrial feature, although the fine arts are likewise embraced in its plan.

In the year 1869 a society was formed at *Dresden*, whose aim it is to establish a collection of art-industrial objects, and to give support to the art-industrial schools now existing.

The *Art-Industrial Museum at Hamburg* will be found alluded to under the head of "Hamburg."

The *Germanic National Museum at Nuremberg*, the *Bavarian National Museum at Munich*, the *Grand Ducal State Industrial Hall at Karlsruhe*, the *Grand Ducal Museum at Darmstadt*, the *Roman-Germanic Central Museum at Mayence*, the *Wallraff-Richartz Museum at Cologne* (with a drawing-school), the *Museums at Gotha* and at *Stuttgart*, are all, either wholly or in part, devoted to the interests of art-industry, and seek to advance them in various ways, by publications, lectures, &c.

In France, similar institutions are to be found in Paris, Limoges, Lyons, Havre, Amiens, Toulouse, and probably in other places.

Regarding the Russian Museums, see under "Russia."

As one of the latest creations of this kind, the "*Hungarian Industrial Museum at Pesth*" may be mentioned, which was opened April 19, 1874.

It will be noticed that the above list does not embrace any of the museums devoted only to fine-art collections proper. The Royal Gallery at Dresden, the National Gallery at Berlin, the Pinakotheka and the Glyptotheka at Munich, the several galleries at Vienna, the City Museum at Leipsic, the gallery of the Städel-Institute at Frankfort on the Main, the galleries at Brunswic, Cassel, and other places, are institutions which are entirely distinct from the Industrial Museums. — *Transl.*

HUNGARY.

A REVIEW of the state of art-education in Hungary must for the present confine itself to that which is now in process of forming, as art matters are still in an exceedingly primitive condition in this country, as compared with the countries of the West. Hungary, for a long time to come, will have to direct her attention to the more realistic educational necessities of her people, and will have to provide for general culture by means of the People's and Middle Schools, before the ideal elements can be thought of. It is very questionable, therefore, whether the efforts for the advancement of art-education, now making throughout the country by the government, will be able to bear fruit in the immediate future, and whether it would not be wiser to apply all the means at command to the speedy creation of a stable basis for general education, leaving it to time to develop the ideal elements organically and naturally. As a matter of course, the nation, for some time to come, would then have to abandon the competition with other nations, as far as the highest products of civilization are concerned; and it may be a question whether this is possible at the present day. The spirit of the time carries every thing along, and those who would stand still must go to the rear. Hungary must therefore hasten forward with the others as well as she can, but she will have to be very careful in filling up the fearful voids which have been left by an idle past. Sound productivity in the domains of art and of science can only be expected after intellectual means of inter-communication in all directions shall have been provided. Forced production must necessarily be unhealthy, and will either rest upon foreign supports, or will be nothing but an empty show.

This was the impression made by the Hungarian exhibition upon all who mean well to the cause. *As long as Hungarian artists*

receive their training exclusively in foreign countries, their art will not be Hungarian art; as long as industry does not produce its forms and its workmen in the country itself, it will not be national. No efforts are making to refine the existing national elements, although the country is rich in monuments, and possesses a national industry which is quite original. Hungary has done more for the cultivation of art during the last ten years than all she has previously done in centuries. Collections have been commenced or re-organized, societies for the advancement of art have been formed, schools have been established, scholarships have been founded, and magnificent orders have been given to native artists. The future must ripen the fruits of these efforts.

To provide a common centre for art-education, an institution has been founded, which is so organized as to meet the necessities of the present, and which will exercise a beneficial influence in advancing the interests under consideration. This is the Royal Hungarian State Drawing School, and the Seminary for Drawing Teachers connected with it (opened Nov. 1, 1871).

Enactments and laws on educational matters cannot be carried out rationally as long as efficient teachers are wanting. Although drawing appears as a subject of instruction in the Elementary and Higher Normal Schools as far back as the time of Queen Maria Theresa, in the "Ratio educationis publicæ" issued by this sovereign, the traces of the results will nevertheless be looked for in vain. The truth is, there were neither teachers, nor aids for teaching. This want is to be met by the institution lately established. Since the introduction of Real-Schools, in which drawing plays a more important part, and since the subject has been made compulsory in the Gymnasia, the necessity of providing such teachers has been officially recognized.

As to the arrangement of the school in question, it is quite proper that it should have more of the character of a higher Art-Industrial School, with special reference to the liberal arts, than of an Art-Academy, which latter, as experience has shown once before, would be of little benefit, under existing circumstances, either to art or to art-industry. The direction of the school has been confided to Mr. G. Keleti, who has thoroughly studied the question of art-education in foreign countries, and in accordance with whose experience the school has been organized.

The principal aim of this institution is the training of drawing-teachers able to satisfy the demands of the present and the increasing necessities of the country; furthermore, to assist the development of native industry by art-industrial instruction; and, finally, to prepare the more talented scholars for the profession of the artist.

These aims the institution seeks to reach partly by means of practical instruction in the three branches of the fine arts, partly by suitable courses of scientific lectures.

The institution therefore consists, —

Of a general preparatory class;

Of a higher drawing class, which again is divided into three branches: —

Figure drawing and painting;

Architectural and ornamental drawing;

Sculpture, both figure and ornament.

To this must be added the section for wood-engraving.

The lectures on anatomy, descriptive geometry, perspective, shadows, history of art, and other subjects, supplement the practical instruction. For the improvement in drawing of persons engaged in industrial pursuits, whose daytime is devoted to their calling, there is a regular evening class.

The preparatory class admits as pupils only those who have passed successfully through the Lower Real-School, the Lower Gymnasium, a Citizens' School, or a Higher People's School. To gain admission to one of the special classes, it is necessary for the pupil to have passed successfully either through the preparatory class of the institution, or through the preparatory institution for People's School teachers, or through either of the state institutions above specified, and besides to have attained the necessary practice in freehand drawing.

The candidates for the position of drawing-teachers, who receive a stipend from the state (at present thirteen, with three hundred florins each), after passing through the preparatory class, must go through a prescribed course of instruction of three years duration, after which they are subjected to an examination, and receive certificates according to their accomplishments.

The results of instruction which were exhibited by the school

may be designated as very satisfactory. They showed throughout a thorough comprehension, and a freedom in the artistic treatment, which is all the more praiseworthy in view of the short period of the existence of the school. The work of the architectural section (linear drawing) must also be called exemplary.

The Real-Schools in general, as has before been said, are still in want of trained teachers. But, from the results exhibited by the institutions of Pesth and Ofen, it became evident that these latter make an exception. The Upper Real-School of the city of Buda-Pesth must be placed first. The specimens, although specially selected for the Exhibition, showed a steady, correct course of instruction, a careful selection of originals, guided by artistic knowledge, and a skilful application of technical means. Of linear drawings there were unfortunately exhibited too many specimens that gave but little insight into the course of instruction, and into the method. The drawings, especially those of machinery, were brilliant, — only too brilliant in color, and of superfluous finish for school-work.

The course of instruction at the Royal Upper Real-School is likewise quite correct; but it appeared somewhat doubtful whether the specimens exhibited were indeed to be looked upon as *results* of instruction, or whether they were only intended to illustrate the *course* of instruction. The same is true of geometrical drawing, which, in accordance with the regulations still in force, comprises topographical, architectural, and machine drawing. The specimens exhibited were superbly executed, considering the ages of the pupils.

The State Upper Real-School of Pesth was also represented by very thorough and appropriate specimens; the specimens of modelling of both the royal institutions of Pesth were likewise quite praiseworthy.

Among the other schools of the country, the achievements of the Upper Real-School of Pressburg appeared to greatest advantage. The Real-Schools of Kaschau and of Gran are taught according to a good system, although a want of good originals is still noticeable in the last-named institution, as well as in most of the other schools of the province. The same is true of most of the institutions of Transylvania, of which only the Middle School at Hermannstadt made a satisfactory exhibition.

The People's Schools, which are now regulated by law in Hungary, exhibited no drawings, with the exception of the Catholic Girls' School at Pest (landscapes, flowers, &c.).

The prosecution of systematic instruction in drawing in the lowest schools will probably find its main difficulty in the want of sufficiently well trained teachers. For the purpose of introducing a uniformity of system, the government has published a guide, to which the teachers are obliged to conform themselves.

We can only repeat what we said at the outset, that every thing in this department in Hungary is just now in the process of formation, and that it will probably be necessary to await some future World's Fair before passing judgment upon the system adopted.

GERMANY.

It will be conceded on all sides, and without question, that Germany occupied a prominent place at the present Exhibition, in the contest with other states in art and in industry. The mass as well as the variety of the productions exhibited made it evident that the nation has at its command a wealth of talent capable of reaching the highest aims, and that it possesses all the means which are necessary to enable it to add the triumph in the arena of labor to its other triumphs. But, in spite of all exertions, this triumph has not yet been achieved, and the "battle of forms" has again resulted unfavorably to the Germans. This is a fact which can only be accounted for by the deficiencies of art-education, and of the cultivation of art in general.

After German art, at the commencement of this century, had begun to develop itself in men of great talent, and to bring forth grand monumental works, more especially under the patronage of the Bavarian princes, art-industry still continued, for a long time, to play a subordinate part; since, on the one hand, the royal road of art did not touch the domain of art-workmanship, while, on the other, French taste was everywhere so deeply rooted, that it seemed impossible to oppose it with a view to a reform. German industry in general appears to possess but little national character, from the time of the degeneration of taste in the seventeenth century, down to our own day. And yet the opposition against the rule of French taste emanated from the elements of the older national art, which, although crippled and neglected, have preserved their individuality even up to the present time. Germany had brilliant epochs in art and in industry, before the time of the Baroque style. German Renaissance, in its rich development during the sixteenth century, in which the traditional

mediæval elements united with those of the antique, forms the true basis of our national art. In painting, the mediæval forms were completely absorbed by the antique; in the present age, a refined realism is developing itself side by side with idealism. Sculpture still bears the marks of the epoch in question more distinctly, but it is likewise about to pass on to realism, from the antique. Architecture, which at the same time had admitted antique decoration into its Gothic forms, again righted itself when the purification of styles took place, consequent upon the complete re-awakening of Greek art. Art-industry, however, as before remarked, followed the current of development but hesitatingly. Upon its fallow field there was consummated a dissolution rather than a blending of these elements, which, indeed, are dualistic in themselves. Not that all industrial skill has been lost by the Germans, but the inventive genius is wanting, to develop the elements already at hand.

The visitor at the German Educational Exhibition could see, by looking over the numerous portfolios containing drawings from the various Art-Schools, that, besides the Gothic and the antique styles, the Renaissance was principally represented. But, wherever the attempt had been made to unite these different elements in original productions, the styles rather hindered each other, so to speak, instead of blending together organically. The study of nature, and especially of plant-forms, is still wanting in the schools; and both of these are indispensably necessary if the ornament in German industry is to be purified. As long as the traditional forms are only copied, there can be no thought of the development of new elements. The study of nature must also supply the understanding of the purpose of the ornament, i.e., its relation to the object and to the material employed, or the art of learning how to translate prosaic forms into forms rhythmically constructed. The German Art-Industrial Schools are often closely connected with industry, and their influence is perhaps quite as potent as in France and elsewhere; which becomes apparent from the fact, that the same defects and the same excellences are observable on both sides.

The experience gained by the Germans at former World's Fairs, in the department of art-industry, has indeed brought about a slow revolution in taste; but a decided reform has not yet taken place.

It must of course be admitted, that the requisite political unity, and with it the necessary guiding and animating impulse from above, was wanting until of late; but there was also wanting what Gottfried Semper, at the time of the London Exhibition, indicated in his "Propositions for the Incitement of a National Art-Feeling,"[1] viz., "a suitable general education of the people in matters of taste." It is only quite recently that things are beginning to stir on all sides; and, if the efforts now making are vigorously continued in the future, art-instruction may before long occupy its proper place in the schools. Drawing, which, outside of the Art-Schools, used to be practiced only in the Industrial Improvement Schools, and in the Sunday and evening classes, has now been partially introduced into the institutions for general education, where it is charged with the mission of awakening the feeling for the beautiful in form. Much, indeed, is still to be wished for, and much still remains intrusted to the future; but the fullest measure of recognition is even now due to the energetic efforts of the German drawing-teachers, who have taken hold of their subject with the most active zeal, and have already achieved excellent results, especially in regard to methods, and the provision of suitable examples for elementary instruction. It was only to be regretted, that so little of the work of the pupils of the People's and Middle Schools was exhibited; the greater bulk related to the special schools and schools for adults, giving a very clear insight into the efforts now being made in this field, especially in the South of Germany.

In the following review of the exhibitions of the several German states, the reporter has therefore treated more especially of industrial education, and, as far as the People's and Middle Schools are concerned, has frequently confined himself to a discussion of the laws pertaining to this subject, and to the drawing-copies and other aids for teaching which were to be seen at the World's Fair. The material offered for inspection was quite abundant; and most of the states had taken care to supplement by written explanations whatever had been omitted in the Exhibition for want of room or for other reasons.

[1] "*Propositions, &c.*" — See Gottfried Semper: Wissenschaft, Industrie, und Kunst. Vorschläge zur Anregung nationalen Kunstgefühls. Bei dem Schlusse der Londoner Industrie Ausstellung. Brunswic, 1852.— *Transl.*

Bavaria. — The Educational Exhibition of Bavaria covered all categories of educational institutions, from the Primary Schools for the smallest children to the Technical and Industrial High Schools. Numerous statistical tables, programmes, &c., supplied very full information regarding the organization of educational matters, and gave a clear survey of each separate branch of education.

The Art-Industrial Schools, with their nuclei at Munich and Nuremberg, are the traditional centres of gravity for drawing-instruction in Bavaria. The subject is made to serve the industries almost exclusively; and, even down to the latest times, no other than practical results have been aimed at. It need not surprise us, therefore, that the understanding of art among the people of Bavaria still leaves much to be desired, in spite of the flourishing condition of art at the academies, of the numerous collections, museums, monuments, &c., created by art-loving kings. The principal purpose of instruction in drawing will always be to educate the eye to read and to understand forms; but the subject has been totally neglected heretofore in the Bavarian schools. Since German art was recalled to life by Cornelius, so many roads have been opened for this branch of instruction, that it must indeed appear strange to see so little attention paid to it, as a part of the education of the people, in the very country in which this resurrection took place. "Although instruction in drawing," says J. Bahm in his "Statistical Handbook of the Bavarian People's Schools" (1872), "was made a compulsory study in the People's Schools by the plan of instruction of 1811, it is nevertheless neglected in most of the schools even to-day; it is partly taught only in the larger cities, and it is more than surprising that in Nuremberg, the principal industrial city of Bavaria, this branch of instruction is not cultivated at all."

Very naturally the specimens from the Bavarian People's Schools to be seen at the Exhibition were unimportant, and gave no evidence of any definite method. An exception was made only by the Munich schools, in which, according to the new plan of instruction of 1872, drawing upon slates is begun in the first class, proceeding in the following classes from the drawing of simple geometrical forms, upon paper, to outline ornaments. Better methods are also followed in the schools of Kirchdorf and Aich-

bach, in which latter place stigmographic copies are used with success.

The reason for the slight attention paid to drawing in the Bavarian People's Schools is no doubt frequently owing to the desultory, unsystematic preparation of the teachers at the seminaries. The specimens exhibited showed this very strikingly. The law of 1866 for the education of teachers, prescribes the following order for the three courses: "Course I. Practice of the eye and the hand in drawing from sufficiently large bodies with flat surfaces; explanation of the phenomena of sight, and consequently the first notions of perspective; practice in regular curves and spiral lines, as ground forms for ornamentation. Course II. Drawing of simple Roman ornaments from wall-charts, and, if feasible, likewise from casts. Drawing of the proportions of the human head and its divisions, in simple outline. Course III. Continuation of practice in drawing from wall-charts and from the round. Drawing of the human head and of its separate parts on various scales. Linear drawing: Laying out, dividing, and measuring of straight lines, plane angles and figures, construction of scales with the aid of ruler and instruments." The numerous specimens exhibited by the various Seminaries made it evident that these demands are only partially complied with. It must also be noticed, that none of the institutions had arranged their drawings in systematic order, so that no insight could be gained into the method. The want of good originals likewise made itself frequently felt. Except in the institutions at Straubing and at Rosenheim, Herdtle's Ornaments, which are so practical for the People's Schools, were nowhere to be found. As a general rule antiquated ideal forms are copied, which indeed *remind* one of the antique, the Renaissance, or the Gothic style, but are so lax that they might rather be said to represent the tendencies of the Baroque epoch; it is the same with figure-drawing, which, however, is practiced only incidentally. Drawing from casts shows good results wherever it is preceded by good outline-drawing; very neat work of this kind was shown by the Seminaries at Speier and at Lauingen, but the portfolios of the latter also contained objectionable landscapes. Drawings from models (geometrical forms) were exhibited by the Seminary at Kaiserslautern. The institutions at Würzburg, Freising, Bamberg,

and Eichstädt adhere principally to outline ornament; at the Seminary at Passau, unusual attention is devoted to drawing from casts, but in a line-manner which cannot be recommended, as the modulations of the form can never be mastered by it as well as when tints are employed.

Regarding geometrical drawing, it may be said of the institutions named, that projection is principally practiced in its application to simple architectural subjects, such as columns, &c. For the present, systematical geometrical drawing is practiced but little in the Seminaries. A small and concise manual by J. Böhm, "Drawing Geometry," which was shown at the Exhibition, and which is especially intended for those who aspire to become teachers, is well calculated to supply the deficiency in this respect.

In the Real-Gymnasia of Bavaria, drawing is practiced, if not with remarkable, at least with very respectable success. Ornament is practiced almost exclusively, and the main stress is laid upon correct outlines. The examples are taken from the Renaissance and the Gothic style; the technical means are pencil and pen. The first class begins with geometrical forms, which are followed up in the second class by outline ornaments; in the third and fourth class shaded drawing from casts is practiced, and the more talented pupils are permitted to draw figures.

According to a royal enactment of the year 1867, it is the province of the Bavarian Real-Gymnasia, to impart not only a general scientific education, but also to provide for that knowledge which is necessary as a preparation for the various callings requiring a more intimate acquaintance with the exact sciences. They are therefore primarily intended to provide the requisite basis for the studies of those who propose serving the state in a technical capacity, and, running parallel to the humanistic Gymnasia, they presuppose the knowledge of the four classes of the Latin school. A wider scope is consequently given to drawing in these schools, than is given to it in similar institutions in Austria, in which, indeed, the bifurcation lies in the foundation, the tendency is preeminently humanistic, and little attention is paid to linear drawing. In these Austrian schools, geometry is assigned to mathematics, and projection is only practiced in the fourth class, together with freehand drawing, which, at the rate of only four hours each

week, must evidently be of but little importance. In the Bavarian Real-Gymnasia, three to four hours are devoted to geometry in the three first classes, and six hours to drawing throughout, the order of studies, according to the programme laid down by the Government, being as follows: Construction in the plane, projection, shadows, and perspective.

The Real-Gymnasium at Munich, following the "Manual for Instruction in Linear Drawing," by L. Edelmann, Munich, 1871 (the author is a teacher engaged in the institution), exhibited very praiseworthy specimens, which fulfilled all the requirements of the plan of instruction. The same cannot be said of most of the other institutions. The beginning is generally made with projection at the outset, and building and architectural drawing are practiced almost exclusively; here and there constructive perspective is also practiced, but without a definite, uniform plan of instruction. The first orders of columns play the principal part in linear drawing, here as well as elsewhere in the Bavarian schools.

The Real-Gymnasium at Ratisbon stood next to the institution in Munich, as regards good freehand drawing; but bad copies for figures neutralized the good effect produced by Herdtle in ornament. Perfect outrages were also to be found among the figures in the portfolios of the institutions of Nuremberg and Würzburg, whole academical studies having been executed with the pen. At the latter school, good work is, however, done with the pencil from casts from ornaments.

Drawing in the other Latin Schools in Bavaria, as well as elsewhere, occupies rather an isolated position, and will continue to occupy it as long as a bridge is not thrown out from both sides, — the real as well as the humanistic branches. The revised regulations for the Latin Schools and the Gymnasia in the kingdom of Bavaria, of the year 1863, tolerate drawing as an elective subject, and leave it to the "zeal of the rectorates and teachers by adequate instruction to awaken a lively interest for it in the pupils." It will easily be seen that this regulation had no effect whatever, without necessarily blaming the rectorates and teachers concerned. A presentiment of the necessity of drawing again made itself felt in the "Outlines of a Regulation for Learned Middle Schools"

the Kingdom of Bavaria" (elaborated by the Consultative Commission, 1870); but it was simply a jack-o'-lantern, as the idea was not in the least adhered to. The paragraph in question (2) runs thus: "Instruction in drawing, in accordance with the previous regulations of the order of study, is admitted into the scheme of instruction as an elective subject. In view of the importance of this study for the development of the feeling for form, and for the education of a refined taste, it may be legitimately asked, whether it should not be prescribed as a compulsory subject of study, at least in the classes of the Latin School. But, as the commission has not discussed this point, drawing has been treated as an elective subject of study in the 'Outlines' under consideration, in accordance with previous regulations."

So the question remains an open one for the present; but from day to day it presents itself more urgently to the humanistic educational institutions. Art-education knocks loudly at the doors of the Gymnasia; and they will not fully justify their title of "Humanistic Educational Institutions" until this unfortunately too long neglected study shall have been added as a supplement to those now recognized.

We shall now turn to the schools in which drawing is practiced mainly in the interest of industry, i.e., to the Industrial Improvement Schools, and to the Industrial and Technical Schools proper. Nearly every more important place in Bavaria has its Industrial Improvement School, most of them supported by the communes, in which partly purely industrial, but sometimes also agricultural and commercial interests are cared for. It is the first aim of these schools to give to the artisan the elements of general education, rather than to prepare him for his special calling, so as to train able men in the industrial classes, who shall unite a certain intellectual maturity with a knowledge of their specialty, and who shall be equal to the demands made upon them by the social and political life of to-day.

Nobody will deny that drawing is called upon to play an important part in these schools. It must be employed to exert a purifying influence upon taste, and must also give that necessary technical skill which is so directly applicable to practical life. The former can be reached only by means of a systematic course of

instruction, with good examples, while the latter will depend upon the activity and the diligence of the pupil. On the whole, the Bavarian Industrial Improvement Schools, to judge by the specimens exhibited, leave much to be desired as yet in both respects. The main reason for the poor results may, indeed, be sought in the fact, that the preparation of the pupils in the elementary schools is exceedingly unequal, and that the weaker part of the pupils of these preparatory classes generally finds its way into the Improvement Schools; but local circumstances which hinder a systematic prosecution of the course of instruction must also be taken into account. Good drawing-copies would therefore be of the most urgent necessity in the drawing-classes. But whoever looked over the portfolios of this category of schools was compelled to acknowledge, that, for the present, there are great defects existing in this respect. Forms of ornament are still commonly in use which are antiquated, and which but rarely have any reference to practical application. As regards the *technique*, shading is mostly commenced too soon; the drawing of forms is frequently abandoned too early, and recourse is had to making pictures of landscapes. In linear drawing, the elements of geometry are wanting in most of the schools; instruments are used in the first stages in drawing decorations of surfaces, mosaic floors, &c.; and these exercises are followed up by projection and architectural drawing.

The only praiseworthy exception was made by the school at Töls, which exhibited good outline ornaments, and very respectable drawings in various specialties. Günzburg also showed to better advantage; the institutions of Werdenfels, Landsberg, and Aichach likewise gave evidence of good intentions. In the Improvement Schools of an agricultural tendency, topographical drawing is here and there practiced with tolerable success.

Better results are naturally reached in the day-schools; and the institution at Rosenheim had sent very excellent work. In this connection, the specimens furnished by the Building Trades School at Ratisbon must also be mentioned. They clearly illustrated the course of instruction in all the branches of building drawing, and were among the best of their kind in the Bavarian Exhibition.

The results of drawing instruction in the Industrial Schools proper may, on the whole, be called satisfactory, and more especially so in some of the institutions known as District Industrial Schools[1] (supported by the districts), a fact which is to be attributed to the more liberal endowment and the better situation of these institutions. In the organization of the schools, local necessities are frequently kept in view, and, on the whole, the commercial tendency prevails in them; only the schools of Nuremberg and Munich possess a pronounced industrial character.

The drawings by pupils which were exhibited, evidenced throughout an efficient system of instruction. A beginning is generally made, in the first freehand course, with Herdtle's or Volz's copies. These are succeeded in the second course by ornaments slightly shaded, and drawing from casts, projection being practiced quite extensively at the same time; the third course is more especially devoted to drawing relating to special branches, freehand drawing being practiced exclusively from nature, while architectural and machine drawing is practiced in linear drawing. Very good work was exhibited by the industrial schools of Würzburg, Ratisbon, Nuremberg, and Fürth. The latter institution also exhibited an extensive collection of stereometric models (constructed of glass surfaces) which had been executed by Dr. Langhans, a very efficient teacher in the school, and which, in exactness of execution and in practical combination, left other aids for teaching of the same kind far behind.[2]

The achievements of the schools at Beyreuth and Freising also deserve honorable mention.

The Munich Improvement School for Artisans was especially brilliant in its (technical) linear drawings. The ornaments, although sometimes of excellent execution, were wanting in grace, — a peculiarity which, unfortunately, they share with German industry in general. The modelling in wax, and the chased work, were undoubtedly above criticism in their technical execution; but

[1] There are altogether thirty-one Intermediate Industrial Schools in Bavaria, six of the most important of which are called District Industrial Schools.

[2] The reporter believes it his duty to dwell upon these excellent models with especial emphasis, as, strangely enough, they were overlooked by the jury.

there was a certain heaviness of style, which frequently interfered with the distinctness of the motives.[1] Volz's wall-charts, "School of Ornament and Architecture" (mostly Gothic and Greek motives), which are in use in the institution, afford practical aid in teaching. I would prefer a more decided accentuation of the light and graceful elements of which the Renaissance is so fruitful a source.

No especial tendency of taste was to be discovered in the drawings exhibited by the "Polytechnical Central Society of Würzburg." The beginning with outline ornament is good; the continuation in figure and landscape drawing, on the contrary, is deficient. The drawing of wire-models and solid bodies, in the excessive finish shown by the specimens, is likewise waste of time. The drawings of ornamental sculpture, on the contrary, deserve recognition, but untasty paper of too dark a tint had been used throughout. Figure-drawing from casts and from nature was quite insignificant; the studies in color of flowers, still-life, &c., were better.

The study of plant-forms, as before remarked, is unfortunately practiced but little in the German drawing-schools; a tendency towards improvement is, however, noticeable in this direction. Very excellent aids for teaching, to assist in the transition from conventionalized to natural plant-forms, were shown by J. Filser (Munich), in the shape of a collection of casts from living leaves, the natural movements of which had been transferred exceedingly well into the more solid material.

Besides the works mentioned, not much has been produced in Bavaria of late, in the way of drawing-copies. The excellent works on linear and ornamental drawing, by Prof. H. Weisshaupt, the zealous champion of the advancement of drawing-instruction, are too well known everywhere to need more than a mention here. E. Volz, teacher of drawing and modelling at the District Industrial School of Kaiserslautern, deserves praise for his copies and wall-charts for elementary instruction. Through his instrumentality the stigmographic method, which is so very

[1] *Motive* is a very convenient word, which might as well be introduced into the dictionary of English art-language, the same as it has been long ago introduced into that of English musical language. Here, as there, a *motive* is a theme, a suggestion, which the artist may reproduce in a variation.—*Transl.*

practical in the first stage of instruction, is being introduced into the drawing-schools of the Palatinate. His neat little books, based upon this method, deserve the fullest recognition for their careful, systematic grouping of the simplest geometrical forms; the same author's copies for instruction in linear drawing, for the use of the lower sections of Technical Schools, are likewise quite practical.

The centre of attraction of the Bavarian Educational Exhibition was, however, formed by the works of the higher Art-Industrial Schools of Nuremberg and of Munich. In Munich, the interests of art-industry are principally cared for by the Royal Art-Industrial School and the Art-Industrial Association, while the cultivation of art proper is made over to the Academy of the Arts of Design, which, under Kaulbach's[1] and Piloty's direction, may at present be looked upon as the central point of German painting.

In Nuremberg both tendencies are united in one institution, — the oldest among the art-schools of Germany (founded by Joachim v. Sandrart, 1606–1688), which has made considerable advances, especially during the two last decades, under the excellent management of A. v. Kreling. The objects exhibited by this institution gave a clear idea of its plan of instruction and of its exertions in behalf of taste. The plan of instruction is based upon the desire to carry the artistic education of the pupils to the highest possible perfection in all branches, and, at the same time, to elevate industry by bringing it under the influence of art.

Instruction begins with the drawing of ornaments from casts; and the pupil, after having reproduced the outlines correctly, is led to study the equally important internal movement of the forms. The modelling of ornaments is generally done from drawings (old examples being partially employed), so as to give facility to the pupil in the translation of graphic into plastic representation, which is so necessary in industrial pursuits.

To give practice in the treatment of wood and of metals, wood-carvings and chased works in metal are executed in the institution,

[1] *Kaulbach.* — It is hardly necessary to say that Wilhelm von Kaulbach died April 8, 1874, when Prof. Langl's Report had already been published.— *Transl.*

which either pass into the shops of manufacturers as models, or are put to direct use for ecclesiastical or profane purposes.

In architecture, constructive drawing from antique, Gothic, and Renaissance examples, is followed up by original designs, and by the application of architecture to the ornamentation of art-industrial objects.

In the figure the antique is succeeded by the study of nature, for the portrait and for the whole figure, in drawing as well as in modelling. Painting is also practiced in this connection.

The institution, likewise with a view to the advancement of art-industry, also accepts orders for plastic or pictorial objects of a larger size, as well as for the solution of purely artistic problems, the execution being intrusted to the pupils under the direction of their teachers. By this arrangement, which has resulted from experience, the institution provides that which is so frequently wanting to German industry, and which was particularly dwelt upon at the beginning of this essay, — a bridge between art and art-industry.

The organization of the Nuremberg Art-School, such as it has been rapidly sketched here, together with its supplementary art-historical and anatomical lectures, the employment of various processes for the multiplication of its productions, &c., certainly leaves nothing to be desired. The only question which remains open to discussion, is this: What relation does the tendency of the school (as regards style) bear to the general current of the times? and what influence will it exercise upon German industry for the present, and in the immediate future? As a matter of course, we here touch upon a question of much more general importance; this, namely: What part does the Gothic style enact in the architecture and the industry of to-day?

Whoever wanders through the streets of old Nuremberg will readily understand, that, in the midst of the living traditions of the middle ages, among the fairest flowers of German art, these same elements must necessarily continue to thrive in an art-school there situated, even when elsewhere time has already provided a new garment for art, and taste, always developing in ever-varying changes, has indulged itself in an abundance of other forms. The

Gothic style lost almost the whole of the field of secular art, from the time when modern art, principally through the example of the Renaissance, returned to nature, and when the spirit of poetry again recognized in nature the purest sources of its inspiration. The Gothic style therefore turned its attention more especially to ecclesiastical art, in which it had, indeed, brought forth its grandest creations in the past, and in this department alone will it still be able to thrive, in architecture, as well as in art-industry. Under the pressure of the times the Nuremberg Art-School, which used to cultivate the Gothic style by preference, has also taken up the German, and even the Italian Renaissance, by degrees. The graceful forms of the South alongside of the severe, strongly-marked forms of the North! The various elements touch each other, but they do not unite in renewed fructification. However respectable the achievements of the school in its various directions may be, they nevertheless show that its greatest attainment is to be found in the imitation of traditional forms. The pulsating elements are wanting, which stimulate to the production of new and vital forms; and the compositions will always be deficient in originality as long as existing motives are only combined. When the attempt is made to treat the Nuremberg and Augsburg examples with more freedom, the ornament loses its proper nucleus, and becomes insipid in its continually unrolling strips of leather, which are any thing but graceful, although they will admit of an animated play of forms.

The Gothic style must continue its development in the ecclesiastical field, if a development can be spoken of at all, while secular art must start from nature in its ornamental motives, and must speak the dialect of the Renaissance in its forms and for its purposes, if an open road is to be constructed for progress. In this respect the Nuremberg Art-School is still incomplete. Grace and life must be sought in nature, while the technical must be studied in the productions of art. A praiseworthy beginning in this direction has already been made with the figure, especially under the influential management of Kreling; the study of nature in this department, in drawing as well as in modelling, being carried on most assiduously. Unfortunately, however, the numerous busts and academical figures showed that this translation of

drawings into plastic works, which is certainly of great value to art-industry, is taken up somewhat too early; the surety in laying out the planes is wanting, which can only be obtained by thorough study of good sculptures, or of nature. In this wrestling with form, the pupil very naturally loses the individual, the intellectual in the conception, which belongs to the face as the fragrance does to the flower. The studies in relief were likewise wanting in finer feeling, and often in the organic flow of the forms, which, again, can only be obtained by thorough anatomical study, and a skill well schooled by the antique. The high, almost round treatment now in vogue might also be replaced with advantage by the noble profile of the Parthenon reliefs, as this would accustom the pupils, and more especially the beginners, to a severer adhesion to form.

The style shown by the numerous ornaments exhibited has before been indicated; they all gave evidence of the technical skill of the pupils.[1] Neatly executed modellings in wax, most of them intended for the ornamentation of vessels, utensils, &c., must also be mentioned. There were also exhibited very beautiful, sometimes indeed exemplary, designs for furniture, which had been executed in the institution; and it may be said in general, that the productions of the school in this department are very laudable, especially in church furniture. In the architectural designs the Gothic style predominates; and the extensive activity of the institution in this respect was illustrated by photographs and drawings. The wood-carvings and the ornaments in plaster moved within the sphere of the Gothic style and of the Renaissance, and likewise left nothing to be desired as regards technical perfection. As to the drawings, the only fault to be found was, that they were finished "too much." Time is money, more especially to the disciples of art; and the lithographic stippling of planes, backgrounds, &c., is not only waste of time, but it is also deadening to the intellect. In the execution in drawing, the German, as well as the Italian schools, may still look upon the French as models, i.e., they may learn from them the shortest way to the purpose by the simplest means. It appears,

[1] The institution reproduces most of the works of its pupils, for the use of other schools; and four hundred and thirty-six models have so far been published for this purpose.

indeed, and it is certainly to be hoped, that the institution permitted the expenditure of so much time only upon the specimens intended for the Exhibition, although this would again show that the aim of the Exhibition had been misapprehended; for one of the main levers of progress is to be found in the comparison of the various methods of execution now in use. The crayon-studies of heads from nature (executed on white paper) gave evidence of a more profound and more individual conception than the studies in plaster. The academical drawings in crayon and charcoal likewise manifested throroughness of study; but it must be said that names were to be found among them to whom the master's diploma in art was awarded long ago. The oil-studies looked as though they were all the work of one hand; whether this be an advantage or a disadvantage of the school, we cannot at present investigate.

The efforts of instruction in drawing in all the German Art-Schools are principally devoted to the thorough comprehension of form, and by far too little stress is laid upon picturesque illusion, i.e., the variety in the shading, which, after all, is of importance. The drawings from casts, with their glaring lights and shades, mostly look as if they had been made from bronze models; a more graceful, easier execution is greatly to be desired. It is curious that red chalk, which is so telling, is everywhere rejected as a drawing material.

The ever-growing collections of the Art-Industrial Museum at Nuremberg, which again received important accessions from the Vienna World's Fair, will undoubtedly by degrees bring industrial education into closer communion with the tendencies of our time; and this can only be of advantage to the industries of the Nuremberg district.

Art-industry in Munich, the same as in Nuremberg, likewise bears a specifically local character. Here, in consequence of a richer development of art in general, peculiarly pleasing motives of a romantic tendency have been intermixed with the German elements, and have been introduced into all branches of art-industry with peculiar skill. Here, where Schwind, the "father of the fairy tale" in art, called forth from the interior of mountains, from rocky castles, and the darkness of the forest, his magic figures

enshrined in leafage and arabesque; here, where Kaulbach, the master humorist, has been active for decades, and where one troop of mirthful disciples of art is relieved by the other, all of them finding in the "Fliegende Blätter"[1] a classical diary for their never-failing wit and their genuine German poetical feeling, — here a reflection of this art-life upon industry must necessarily take place, so much the more so, as many of the most prominent artists have made industry the sphere of their principal activity in the later years of their lives.

The central point of this development is formed by the "Art-Industrial Association" of Munich, by whom the "Journal for Art-Industry" has been published since 1851, many volumes of which were exhibited as an evidence of the exertions of the association. Besides these, there were exhibited a large number of drawings emanating from the studio of the association, and further illustrating the "Munich style" in the various branches of art-industry.

In the fountain before the City Hall this merry combination of figures and architecture has even ventured to enter upon the domain of monumental art. In the Exhibition it was to be met with only in its most wanton mood in diverse vessels, utensils, &c. The ornament is continually dissolving into human or animal forms; the most curious things are built up with picturesque cleverness, without giving offence. Thus the claw of a griffin grows out into a stag's head, the antlers of which support a drinking-horn; a harlequin is practicing gymnastics on a mug, and in his accidental position forms its handle; gnomes and nixes desport themselves in every corner; the eye is amused by them, and excuses the frivolous play with æsthetics on account of the skill and the humor with which these things are made.

The Exhibition showed that the style which is cultivated at the Royal Art-Industrial School of Munich tends more especially towards the Renaissance, although older classical motives are also employed. The drawings consisted mostly of designs for decorations, which, indeed, appear to be the principal aim of the school. A zealous study of plant-forms imparts life to the motives, and

[1] "*Fliegende Blätter*" (Flying Leaves), a humorous weekly journal, published at Munich, now in its sixty-second volume. — *Transl.*

its beneficial influence was particularly observable in the colored decorative studies. The ornaments in plaster executed by the pupils, mostly from small sketches by Director H. Dyck,[1] evidenced a good comprehension of form, and were executed very delicately. The same is true of the wood-carvings and bronzes. Figure-drawing was more feeble; but the course of instruction was likewise represented systematically, and the results could be traced step by step, which was not the case with the Nuremberg school.

In architectural drawing, there were to be found studies of Greek and Roman monuments, also Renaissance palaces and tombs with all their rich decorative adornments, Pompeian mural decorations, &c.

The plans of the new Polytechnicum of Munich, as well as the casts of the "Aegina" of the Glyptotheka, which are published for sale by this institution, were also exhibited.

In the Hall of Industry, finally, we met with the exhibition of the "School for Wood-Carving" at Werdenfels, near Partenkirchen. The excellent specimens exhibited by it showed that more consistent forms are by degrees becoming current in the unconstrained naturalistic style there prevalent, and that æsthetic rules are slowly taking the place of the empty brilliancy of execution, in which the Swiss notoriously excel.

Wurtemberg. — For years Wurtemberg has taken the lead of all other German States in the cultivation of industrial education; and even to-day it is in possession of the greater number of the schools of this kind, relatively speaking. At the last Paris Exposition, the achievements of these schools made an imposing impression, and in Vienna they likewise formed the centre of attraction in the German Educational Exhibition. The numerous drawings, modellings, and other art-industrial works, took up a large part of the Northern wing of the pavilion of Group XXVI. of the German empire, in part serving as decorations for the walls, and in part being exhibited in portfolios or in showcases.

It was surprising to see that the work is everywhere carried on

[1] *Hermann Dyck*, Director of the Art-Industrial School of Munich, died March 25, 1874. His place has been filled by the appointment of Eugen Neureuther. — *Transl.*

with nearly equally good results, and that even the youngest schools were represented by the most praiseworthy specimens. This shows how excellently the whole educational system of Wurtemberg is organized in this respect, and how beneficial unity of system is to education itself.

Unfortunately the results only of the schools had been kept in view in the Exhibition, and the method had not been illustrated by successive drawings; which, in the presence of the results, would have been especially desirable.

Industrial Improvement Schools are at present to be found in 155 places (110 cities, 45 villages) of the kingdom of Wurtemburg; and these, according to their organization, are divided into the following groups: —

Improvement Schools, in which instruction is given on Sundays and evenings, in the industrial and commercial branches, and which have public drawing classes (5).

Improvement Schools, with industrial instruction Sundays and evenings, and public drawing classes (15).

Improvement Schools with instruction on Sundays and evenings, without public drawing classes (92).

Improvement Schools with industrial instruction in the evening, without instruction on Sundays (10).

Drawing Schools simply, without further instruction (33).

The number of pupils, amounting to 8,876 in 150 Industrial Improvement Schools in 1870–71, rose to 9,763 in 1871–72 in 155 schools; 7,430 of the pupils being under, and 2,333 over, seventeen years of age.

Besides these schools, the country possesses of technical institutions of learning, the Polytechnical School and the Building-Trades School at Stuttgart, and, for the special cultivation of art, the Art-School at the same place.

It is impossible to review the achievements of each separate school without exceeding the space at command; but it will probably suffice, for the purposes of general characterization, to touch upon the most noteworthy only.

In freehand drawing, a beginning is generally made with the drawing-copies by Herdtle, published by the Royal Commission on Industrial Improvement Schools.

This excellent work has also naturalized itself in most of the German and Austrian schools, and is especially used to practice outline-drawing in systematic progress from geometrical ground-forms to curvilinear ornament; at the same time it offers an opportunity to give the pupils simple exercises with the brush in laying flat tints. When a certain dexterity of conception and of technical execution has been reached, object-drawing is taken up, beginning with geometrical forms, but immediately passing on to ornaments in plaster, at first in outline, and by degrees in shading.

For this purpose there were executed in the modelling institution of the Royal Wurtemberg Central Bureau for Industry and Commerce, a series of more than four hundred plaster models, which are also arranged progressively, beginning with straight-line geometrical forms, and then, from the simplest leaves, passing on to richly developed ornaments which are composed for given spaces, thus showing their eventual practical application. In style, the motives belong almost exclusively to the Renaissance, a few only having been selected from the Gothic and the older antique styles.

To aid in the transition from conventionalized to natural plant-forms, casts of plants, &c., have also been admitted into the collection. For figure-drawing there is a collection of casts from antique busts, torsos, limbs, reliefs, and small statuettes; a series of models for the study of theoretical forms has likewise been added. A large part of this excellent collection was on exhibition, together with an illustrated price-list.

The drawings from casts are executed throughout with crayon or charcoal upon white paper, the tint being carried up to the highest light. This method is in use almost universally in Germany, although it entails the greatest waste of time, and the tinted paper of the French would be preferable. Occasionally the execution was masterly, and the patience of the pupils in minutely stippling out the tints in backgrounds, sometimes a foot square, compelled admiration, coupled, however, with regret for the time spent upon them. The most extraordinary feat in this respect had been achieved by the school at Rottenberg, where the whole ground-surface in large decorative pieces for panels had been filled in with an even grain. This dwelling too long upon the form in general,

is also the reason why the shadows are frequently rendered too dark, so that the drawings from models no longer make the impression of plaster, but look like bronze. A decided emphasizing of the planes, with less finish, would certainly be preferable for the study of form. In ornament, which always obeys a distinct rhythm, the uncertainty in the mastery of the form is not as noticeable as in figure-drawing — a fact that was quite apparent in some of the schools.

Special instruction in drawing adapts itself to local necessities, and in most of the institutions very superior results are also attained in linear drawing. To give a more detailed insight into the state of instruction in drawing in the Industrial Improvement Schools of Wurtemberg, we will mention a few of the schools, together with their achievements, as follows: —

Aalen.[1] — Principally machine-drawings, with simple outlines of the sections. Modellings in wax (mostly in plaster casts) of rich Renaissance ornaments, gracefully executed, of good style.

Biberach. — Architectural drawings, some of them treated very effectively in color; building in brick; Swiss style; and Renaissance motives; also purely decorative ornaments; large pen-drawings of outline ornaments; figure-drawing tolerably feeble. Of modellings: Renaissance ornaments, busts, Thorwaldsen's relief "Day." Wood-carving: Ornaments for panels, frames, &c., of excellent technical execution.

Ellwangen. — Architectural drawings beautifully finished; systematic representations of projections and shadows.

Esslingen. — Projection, machinery, architectural details; also small landscapes in oil, flowers, &c., to supply the wants of local industries.

Geislingen. — Linear drawing is treated very thoroughly and systematically, also the most important points in perspective. Technical drawing: Principally architecture; good designs of furniture also deserve to be mentioned. Carving in ivory being a prominent branch of industry in Geislingen, small ornaments are principally practiced in freehand drawing, and these are succeeded by the forms of the Renaissance and of nature; the ivory carvings

[1] The Industrial Improvement Schools of the respective places are always to be understood.

on exhibition were rather overladen with ornament. In the larger modellings and in the wood-carvings, the imitation of German motives is more prevalent.

Gmünd. — Special attention is paid to the manipulation of the metals, and the thorough training of engravers, chasers, &c. Very beautiful drawings from antique examples were exhibited, as well as finished works in metal of exquisite execution.

Giengen. — Well executed ornaments in crayon and in red chalk from casts, and building drawings.

Ehingen. — Architecture, furniture, vessels, &c., some of them very beautifully carried out in color.

Hall. — Pretty drawings of decorative motives, only somewhat hard in color; studies in descriptive geometry.

Heilbronn. — Nearly all branches of industrial drawing; beautifully drawn ornaments from casts, especially worthy of notice. The same is true of *Balingen*.

Ludwigsburg. — Mostly decorative motives in color for decorators, paper-hangers, &c., also projection and machine drawing.

Sulgau. — Good architectural drawings and wood-carvings, principally in the Gothic style.

Ravensburg. — All branches of drawing; above all beautiful projections and topographical drawings; also good color-studies in oil.

Rottweil. — All branches of drawing. Freehand drawing practiced with all materials; special mention must be made of beautiful copies from Calame's landscapes. In linear drawing, very pretty projections and stone construction. Good modellings for architectural decorations, and tasty carvings in wood and ivory, were likewise exhibited.

Rottenburg. — Beautiful drawings from casts, as mentioned above; a large frame carved in wood, but rather overladen with ornamental work; also a large frame of a more architectural nature, in plaster, and very humorous groups of animals in wood.

Schweningen. — Principally small landscapes, flowers, &c., in oil, such as are used by the manufacturers of clocks in the Black Forest.

The Industrial Improvement Schools of Ulm, Kirchheim, Laup-

heim, Mergentheim, Tübingen, Neresheim, Aethaussen, Elingen, Blaubeuren, Waldsee, Herbertingen, Spaichingen, and Horb were likewise represented by specimens worthy of notice.

The "Women's Work-School" of *Reutlingen* exhibited very tasty needlework, as well as very pretty drawings. Instruction in drawing and coloring in this institution is intended to lead the pupils, by successive stages, to the invention and execution of tasty designs for the various branches of female handiwork; the construction of geometrical plane figures and bodies is also taught.

The "School for Interior Decorators" (painters) of *Reutlingen* likewise exhibited some specimens by its, pupils, which, however left much to be desired in regard to taste; the same may be said of the designs of the Weaving School of Reutlingen, which were unsatisfactory both in color and in forms. The motives of the Weaving School at *Heidenheim* were somewhat lighter and more graceful.[1]

Stuttgart, with its higher schools, and as the central point of art-industrial education, naturally had also more important results

[1] *The Industrial Improvement Schools of Wurtemburg.*— It is very interesting to note the population of the various towns and villages, in which the schools spoken of by Prof. Langl are located. Some of them are so small that they cannot be found in any "Gazetteer" or geographical hand-book. The following statistical table is made up from Rütter's "Geographisch-Statistisches Lexikon," 6th edition, 1874. Where no figures are given, the population could not be learned.

Aalen	5,552	Kirchheim (unter Teck?)	5,863
Aethausen		Laupheim	4,090
Balingen	3,212	Ludwigsburg	11,785
Biberach	7,091	Mergentheim	3,713
Blau Beuren	2,216	Neresheim	1,133
Elingen		Ravensburg	8,433
Ellwangen	4,145	Reutlingen	14,237
Esslingen	17,941	Rottenburg	6,145
Ehingen	3,547	Rottweil	5,135
Gmünd	10,739	Schweningen	4,314
Geislingen	3,331	Spaichingen	2,321
Giengen	2,560	Stuttgart	91,623
Hall	7,793	Sulgau	120
Heilbronn	13,955	Tübingen	9,243
Herbertingen	1,532	Ulm	26,290
Heidenheim	5,167	Waldsee	2,529
Horb	2,071		

The same remark holds good of the Austrian schools. The question-mark in the following list indicates that there are several places in Austria of the same

to show, and, in continuation of what has so far been said, we must now speak of the Royal Wurtemberg Art-Industrial School. The specimens of this school were exhibited in the middle of the pavilion, in a pretty decorative arrangement, so that the various drawings formed, as it were, an architectural whole. The commission had taken care to exhibit all the branches of drawing and modelling which are practiced in the institution. In style the Renaissance predominated, but there were also very beautiful studies from classical monuments, Pompeian mural decorations, &c. High praise must be awarded to the outline ornaments, to which

name, leaving it undecided which place is alluded to in the report. But the towns or villages so marked are quite insignificant.

Asch	9,405	Landskron	5,016
Aussig	10,933	Moudsee	1,240
Bielitz	10,721	Petrowitz	?
Brünn	73,771	Reichenberg	22,394
Carlstein (Karlstein?)	666	Rietz	?
Gablonz	6,752	Rochlitz (unter-Rochlitz?)	8,097
Graz	81,119	Rothmühl	3,267
Gmünd	1,900	Rumburg	9,090
Graslitz	6,549	St. Ulrich	1,096
Hallein	3,614	Schönbach	2,640
Hallstadt	1,671	Steinschönau	3,100
Haida	2,069	Tachau	4,111
Hochstadt	1,492	Vienna (in 1864)	607,514
Hohenelbe	5,316	Walkern	
Imst	2,236	Znaim	10,600
Innsbruck	16,324	Zwittau	5,781

For further information on technical and industrial education in Wurtemburg, the reader is refered to Mr. John Scott Russell's interesting work on "The Systematic Technical Education of the English People," London, 1869.

It will be seen from the above lists that all these schools are located simply with a view to the interests of the industries carried on in the various places. The idea of limiting the schools according to the population is not entertained, nor is this idea justified; for a town containing one thousand inhabitants carrying on a special trade, certainly has more need of such schools, than a city of ten thousand inhabitants carrying on no special trade. There are a number of American industries which might be improved by the instrumentality of these schools. Take, for instance, the Yankee clocks. The clocks of the Black Forest are no better, as clocks, yet they command the markets of the world; while the Yankee clock, possessing no artistic features, generally speaking, is restricted to certain markets. But then, in the Black Forest, art-education is a matter of course, while in America it is generally regarded as of little value. The sewing-machine is also awaiting its artistic development, not so much in the case which encloses it, but rather as far as the machine itself is concerned. The *ne plus ultra* of artistic finish, so far, appears to be black lacquer, and big blotches of mother-of-pearl. In the hands of *artists*, it must certainly be capable of something better. — *Transl.*

relief had been given by the simplest means (one tint in sepia), which is certainly quite as serviceable for industrial purposes as minute finish in crayon. Among the plastic objects exhibited, some works in metal, of good style, deserve to be especially mentioned. The wood-carvings gave evidence of considerable technical skill on the part of their authors. The only department of sculpture which exhibited more weakness was the figure; but as a matter of course a thorough schooling in this branch among artisans is beset with great difficulties. The anatomy of the ornament resolves itself into the simple rhythmical development of the motive, and can soon be attained in practice; the case is different, however, with the human figure, in which the forms are more subject to caprice, and must always be penetrated by an intellectual idea. The drawings of figures from the antique, as well as from nature, made a better showing. In linear drawing, classical examples are adhered to in architecture, as well as in decoration.

The Royal Building Trades School of Stuttgart exhibited excellent specimens by its pupils in all the branches of industrial drawing, among them the plans of its own stately building. On two of the walls of the southern part of the pavilion there were to be seen, handsomely arranged, representations of buildings in various styles, decorative architectural designs (among them polychrome Greek ornaments of exemplary execution), and original compositions by the pupils in the department of architecture and of machine-building.

It is the principal object of the Building Trades School to train builders, civil and hydraulic engineers, surveyors, and machinists. Instruction is divided into preparatory and special, the latter being given not only theoretically, but also practically. Practical instruction in the industrial manipulations which can be acquired at the yard, or in the shop, is, however, given only to those who happen to live in localities where such knowledge is not attainable. Up to the year 1864 the school was open during the winter only, but in 1865 summer courses were also arranged; and since then the institution has expanded in various directions.

Excellent specimens were also exhibited by the Evening Classes and by the Public Drawing Class. Drawings from casts, of brilliant execution, were especially to be seen among those by the

pupils of the latter institution. The heads from nature were more feeble. The pupils of the Sunday Course for Painters likewise had good results to show in the various branches.

The Polytechnic School exhibited the plans of its magnificent building, as well as autographs of buildings, and the well-known collection, "Architectural Studies," published by the Society of Architects of the Polytechnicum at Stuttgart. The institution consisted, in the school-year 1871–72, of a mathematical division (in two classes), and a technical division, with six special schools.

The Art-School of Stuttgart exhibited diverse studies from nature, together with original compositions by its scholars. Among the latter, a summer landscape of charming conception, with many figures, and a drawing in Schwind's manner, illustrating the tale "Siebenschön," especially attracted our attention. The studies of heads in oil showed very good intentions. The results of the study of the figure were more feeble.

Before closing this part of our report, we must also speak of drawing in the People's Schools of Wurtemberg. According to an order of the Royal Ministry, dated May 21, 1870, the subject is taught in the People's Schools wherever there is a desire for it, on the one hand, and the necessary teachers can be had, on the other; with the proviso, however, that thirty hours per week for instruction in all subjects shall not be exceeded, and that none of the other compulsory subjects shall be slighted. Any extension of instruction in drawing beyond this limit is left to mutual agreement between the communal authorities and the teacher. As a rule, instruction in drawing does not begin before the pupil has reached the twelfth year; and its end and aim is defined to be, the attainment by the pupil of an understanding of form, together with some dexterity of execution, so that the feeling for the beautiful may be developed and exercised, and the pupil may be prepared for usefulness in life. According to the regulations, free-hand drawing only (without mechanical aids) is permitted, at first from charts, at a later period from copies, the attention being strictly confined to outline-drawing. The specimens on exhibition showed unity of system throughout (Herdtle's examples), and the best results. The outline ornaments were executed on a pretty large scale, which can only be of advantage in the People's Schools.

The results of drawing in the Teachers' Seminaries, as seen at the Exhibition, gave evidence of an excellent method of instruction in freehand as well as in linear drawing. In the first course, outline ornaments are practiced with pencil and pen; in the second course, geometrical bodies, shaded, and ornaments from casts, in crayon or India ink; in the third course, blackboard-drawing as a preparation for practical teaching. Instruction in geometrical drawing is divided between geometrical constructions, projection in its application to architecture, &c. Very good work was shown by the Teachers' Seminaries at Esslingen and at Gmünd, including topographical and building drawing.

In the drawings of the "Woman's School" of Stuttgart, the careful choice of tasty motives is especially to be emphasized, besides their beautiful execution.

The work by the convicts, shown in good studies from casts, in ornaments in color, machine and linear drawings, &c., also deserves to be mentioned.

The Commission for the Industrial Improvement Schools of Wurtemberg, as before stated, has rendered very good service in providing for suitable and practical copies. The "Schools" edited by E. Herdtle are altogether the best we now have for the first stages of instruction, a fact which is proven by their wide dissemination. Of these "Schools" we will only mention here the "Ornaments of the Middle Ages and the Renaissance" (drawn from the originals by F. H.), on account of their charming motives. For special instruction in all the industrial branches, the Commission has published a series of copies, which for simplicity and perspicuity of representation, as well as for suitable selection of objects, leave nothing to be desired. On most of the plates the drawing is accompanied by a short explanatory text.

The "Copies for Technical Freehand Drawing," by P. Hölder (mostly for iron-work), are good, but lack a pronounced style. The "Art of Shading," by C. Riess, contains very beautiful problems in shadows, curves of intensity, &c. Guido Schreiber's "Studies on Bodies" are also to be recommended for the first stages, as showing how plastic objects are to to be represented. "Stereometrical Drawing as a Preparation for Descriptive Geometry," by A. Brude, is intended to be used in the transition from

geometrical drawing in the plane, to drawing in space, as practiced in descriptive geometry. It appears to us, however, that it would be better to go through stereometry at once, in geometrical projection, with good aids for teaching, if it is to be continued at all. "Drawing Geometry," by G. Müller, is a very practical little work, by means of which the pupil can principally be trained in the use of his instruments. The "Collection of Naturalistic Ornaments" for interior decorators, by Ch. Kämmerer, contains neatly executed plates in the French manner.

As a world's journal of art-industry, the "Work-Shop," of Stuttgart, was exhibited in seven languages.

The architectural publications of Conrad Wittwer, Stuttgart, must also receive honorable mention.

Baden. — The Grand Duchy of Baden, the same as at Paris in 1867, participated but little in the Educational Exhibition at Vienna. The Industrial Improvement Schools receive the best of care in this country, and their number at present amounts to forty-three; their aim, however, is general education, rather than special. Great attention is also paid to the education of the female sex since 1870.

Specimens of the work of pupils were exhibited only by the Industrial Educational Institution of Carlsruhe. Among these specimens most of the industrial branches were represented, and the decorative designs (vessels and furniture) deserve to be especially mentioned for their elegant, tasteful style, and their exact, artistic execution. Excellent studies from Greek and Oriental (polychrome) ornaments must likewise be noticed. Of modelling there was but little, most of it ornamental.

Of drawing-copies there were exhibited, "Ornamental Drawing for Citizens and Industrial Schools," by W. Tönius (Carlsruhe); the forms represent various styles; the execution is somewhat hard. The "Landscape Studies," by J. W. Schirmer (died 1863), published by Vogelweider (Carlsruhe), have been reproduced in excellent style, and will also be a welcome gift to the friends of art, as a memento of this poetical artist.

Prussia. — Instruction in drawing is beginning to gain a better

foothold in the People's and the Middle Schools of Prussia, although more slowly than in the South of Germany. The Normal Plan of Instruction of the year 1863 made it apparent already, that this subject was favorably looked upon, and that especial attention was to be devoted to its cultivation in the Intermediate Schools. The plans of instruction forming the basis of the Real-Schools and of the Gymnasia, were elaborated at the time by a commission of artists and schoolmen, and certainly left nothing to be desired, except the time necessary to carry them out to their full extent. In these plans the subject was conceived of as a vehicle of general education, and was therefore considered as an integral part of the educational system of all the higher schools. Accordingly, drawing in the Real-Schools must be a preparation for technical and artistic pursuits; must endeavor to reduce graphic delineation to its primary geometrical operations; and by practical exercise of projection, by perspective based upon mathematics, as well as by continued practice in drawing from casts, must develop the comprehension of space and of form. In the Gymnasia, in which the æsthetical, rather than the technical phase of drawing must be brought into prominence, instruction is divided into four, in the Real-Schools into five, courses or stages, which are independent of the progress of the pupils in the general classes, and are organized according to the abilities of the pupils, and their progress in this subject itself. It is further directed, that teaching shall commence in the first stage with the general knowledge of form, from wall-charts or blackboard-drawings; this is to be followed up in the second course by drawing from geometrical models, as well as from copies, both ornament and figure; and to be succeeded in the third and fourth courses by the drawing of ornaments from casts, the practice of figure-drawing being continued. In the choice of the copies and models, special attention is to be paid to the education and refinement of taste. The teacher is left perfectly free within these limits in regard to choice of method, it being remarked very correctly, that many teachers may be able to reach good results according to the method by which they themselves were instructed, while they might fail under the constraint of another, although perhaps in itself a better method, with which they are not familiar from the start.

If the results, in the Gymnasia as well as in the Real-Schools, have not thus far corresponded to the intentions of this plan of instruction, the first reason for this failure will be found in the fact, that, as before remarked, too little time has been set apart for the subject. With only two hours each week, the long intervals make it difficult to preserve the manual skill, and still more so to keep up the interest, which is principally promoted by results. The Royal Prussian Educational Administration did not exhibit any of the works of the pupils of the Middle Schools, by an examination of which a judgment might have been arrived at. Looking over the numerous programmes of schools, it became apparent, however, that in most of the institutions the desired aim had either not been reached, or that the subject is looked upon and taught in a manner which is not in accordance with the intentions of the plan of instruction. Drawing in the Gymnasia is frequently classed with the "accomplishments," which sufficiently indicates the position assigned to it in these institutions. Then, again, there are to be found class reports, according to which the drawing of heads is begun with in the first stage, and is followed up by shaded buildings and landscapes. In the higher classes these latter are succeeded by "large heads in crayon, landscapes with trees, animals, &c." Even with the most talented pupils it may be doubted whether all this can be practiced with success at the rate of two hours weekly. The Real-Schools are not much more favorably situated as regards the time allotted, the small addition in the number of hours being expended upon linear drawing, which must be practiced in them to a greater extent.

It is well known that there are two classes of Real-Schools in Prussia, besides the higher Citizens' Schools, which latter are similar in their organization to the Real-Schools of the second class. The institutions just mentioned being of a lower order than those of the first class, as far as the sciences are regarded, they might offer better opportunities for the cultivation of drawing. But even in these schools it depends to a great extent upon the insight of the rector for the time being, whether the importance of the subject is recognized, or not.

According to the General Regulations of Oct. 15, 1872, two hours for drawing are allotted to each of the three classes of the Citizens'

Schools. The paragraphs in question are, however, so "lawyer-like" in their phraseology, that it must certainly be left to the respective teachers to make the best out of them for their subject. The passage reads thus: "Stage I. Linear drawing from drawings upon the blackboard by the teacher, reference being made to their geometrical basis; Stage II. Geometrical views of objects of simple form, according to a given reduced or enlarged scale; copying of simple shaded examples of various kinds; Stage III. Elements of perspective; drawing of wooden solids, plaster models, and natural objects; shading in black crayon, India ink, and sepia; copying of finished ornaments, heads, &c."

The complaints frequently made by the teachers of the higher technical schools of Prussia, that the pupils coming from the Middle Schools are not sufficiently grounded in linear drawing, apply equally well to freehand drawing, with this difference only, that the latter follows no further practical aim above the Middle Schools, while, in the present condition of things, an ideal aim can be reached least of all. But, however isolated the subject may still be in the Prussian schools, and however it may languish, especially for want of time, it is all the more pleasant to notice the zealous activity of the drawing-teachers, who have labored incessantly, especially of late years, to obtain for their subject that position which its importance demands. For this purpose they have formed the "Society for the Promotion of Instruction in Drawing," which is to enable them, by united action in matters of method, copies, &c., to give a secure basis more especially to elementary instruction, and which, by means of periodical exhibitions of the work of pupils and of aids for teaching, is to keep them informed of the condition of this branch of education, as well as to provide the opportunity for the discussion of innovations which may present themselves. The society also submitted the report of its committee on the last of these exhibitions, held in 1870, which, in its critical review, gave a clear presentation of the state of drawing-instruction in Northern Germany. As this report owes its origin to specialists, some notices taken from it may serve to supplement the deficiencies of the following review, which deficiencies necessarily resulted from the absence of specimens by the pupils in the Exhibition of 1873.

In the "General Regulations of Oct. 15, 1872," two hours per week in drawing, and two hours in the "science of space," which must no doubt be understood as the science of form, are allotted to the higher classes of the Citizens' Schools (§ 13). In the further elaboration of this point (§ 30), the regulations go on to say: "In drawing, all children are to be employed simultaneously and uniformly; and, by continual practice of the eye and the hand, they are to be enabled to copy given figures on a reduced or an enlarged scale, with the aid of ruler, measure, and compasses, as well as to give geometrical views of objects of simple form, such as utensils, garden-plats, dwelling-houses, churches, and other bodies offering straight edges and large planes. Where this aim has been reached, children of especial talent may be given an opportunity to draw from copies."

Domschke's method, which had before been in use for a number of years in all the Berlin Communal Schools, has therefore been recommended for the first stage. The reporter is far from desiring to pass judgment upon this method, as he has had no opportunity to gain an insight into the results obtained by it, nor does he wish to doubt that speedier results may perhaps be obtainable by it in the science of form proper. But it seems questionable, whether the pupils, by imitating forms with mechanical aids, will attain to the same degree of clear comprehension which will be imparted to them by the independent reproduction of that which they see. Until now, drawing was practiced in the Communal Schools of Berlin according to the methods of Domschke and of Dupuis; and it was intended that Domschke's "Guide" should prepare the way for drawing from nature by Dupuis' method. The figures were drawn upon the blackboard on a large scale by the teacher, according to the "Atlas," and were copied simultaneously by the pupils, by the aid of compasses, rulers, measuring-papers, &c. But the report above referred to states, that "the facilities offered by the use of these aids from the very beginning prevented the pupils from attaining to a direct and clear comprehension, and hindered the untrammelled development of dexterity in drawing, which, for Dupuis' method especially, is so very necessary." While it is generally questionable, therefore, whether by the method alluded to the aim can be reached which has been set

for drawing in the People's Schools, it is absolutely wrong to introduce pictures of landscapes, animals, and figures into elementary instruction, as in the case of the copies by Domschke. But the method of Dupuis, on the other hand, by which the empirical practice of perspective is aimed at, in connection with freehand drawing from surfaces and from solid models, is quite as hazardous. This would demand a maturity of intellect not to be expected of the pupils of the People's Schools. At the same time, if the method is to be carried out with any success at all, each class must contain as small a number of pupils as possible; but it is well known that this must for the present remain a devout wish on the part of the teachers.

The results shown at the exhibition just spoken of were consequently quite desultory, and made it clear that even some of the teachers were wanting in the necessary knowledge of perspective, which, of course, proved fatal to the success of the method from the outset. Many of the schools therefore left the course of instruction which had been prescribed to them, and devoted themselves to "picture-making," which at least does not destroy the interest of the pupils in the subject, although nothing positive is to be learned by it.

The numerous drawing-copies for the first stages of instruction, which had been sent to the World's Fair from Berlin, made it evident, however, that this evil of conflicting methods will gradually be obviated. Among these examples, the "Wall-Charts for Methodical drawing," by Herzer, Jonas, and Wendler, published by the society in question, are well worthy of recommendation as practical aids for teaching. Being simple in their forms, they are easy of comprehension. Ed. Eichen's "Wall-Charts for Elementary Instruction in Drawing" likewise follow the correct method, as a preparation for modelling, although the admissibility of natural flowers may perhaps be questionable. On the other hand, however, the author is to be praised for the emphasis with which he dwells, in the explanations, upon the necessity of making the scholar draw the figures as large as possible, and of compelling him to use charcoal for his first sketch.

At the exhibition in Berlin (1870), before alluded to, the drawings for a "Graded Series for Elementary Instruction," by Zim-

mermann (teacher in Zwickau), caused a sensation which was well justified; and the wish was then repeatedly uttered, that the author might make his plates serviceable to other schools, by reproducing them. At the World's Fair they were likewise to be seen, and received the most favorable commendation on all sides. When speaking of Saxony, we shall recur to this work more in detail. The People's School at Mayence, which is so excellently managed, and the work of whose pupils received such high praise at the time of the Exhibition in 1870, unfortunately did not send any thing to Vienna.

In the provinces of Prussia drawing is well managed wherever the teacher happens to be versed in the subject. This observation very naturally leads us on to the consideration of instruction in drawing in Teachers' Seminaries, whence its cultivation in the People's Schools must necessarily proceed. Down to the present this instruction was very incomplete; and, according to the report already quoted, it was frequently in danger of dying out altogether, owing to the isolated situation of some of the seminaries. But little time being devoted to drawing, and the drawing-teacher being therefore left without adequate employment, the subject was generally intrusted to one of the teachers of science. Suitable teachers were to be had only in the larger cities, which is the reason why good results were generally obtained in those places. If the later regulations in regard to drawing in the People's Schools are to be carried out, the government will have to see to it that due attention is paid to the subject in the seminaries.

In regard to instruction in industrial drawing, the North of Germany is also still far behind the Southern countries. Not very long ago, every thing that was done to advance art-industry emanated from private societies only, and the Prussian government was the most tardy of all the German governments in devoting due attention to this most important factor of wealth. Up to about ten years ago, there were no institutions in Prussia capable of extending adequate support to the art-industries, the only exception being the "Society of Mechanics" of Berlin, which was especially instrumental in advancing the joinery and the weaving of Northern Germany to a certain degree. The Municipal Industrial Schools provided for a more general scientific education, rather

than for special instruction; nor was the organization of the Improvement Schools calculated to make them the hotbed of art-industrial instruction, while the Sunday Free Schools were totally inadequate. The Royal Industrial Institution has more of the character of a technical school, and the Royal Academy of Art is given to art exclusively, so that even from this side little was to be expected for art-industry.[1]

By the Plan of Re-organization of March 21, 1870, the complete course of the Prussian Industrial Schools was extended to three years, and the modern languages were incorporated into the plan of instruction. In consequence of more rigorous conditions of admission, the aim of instruction was elevated for most of the subjects, and linear drawing especially profited by these new arrangements. Generally speaking, the schools retained the character of technical schools, which is quite plainly expressed in the preamble of the Plan of Re-organization. It says: "The youth entering upon industrial life must be able to examine the progress of other nations in the departments of technology and of industry, and to put this progress to use in his own interest, as well as in that of the community. To this end it is necessary that he should have attained a knowledge of the French and English languages, sufficient at least to enable him correctly to understand the works written in them. The physical conditions of the earth's surface, its relation to the aquatic, vegetable, and animal world, must not be unknown to him. Finally, he needs an insight into the history of the development of nations and of states, into their intercourse, and their commercial relations with each other."

It is apparent, that these higher industrial institutions are not intended for the education of the working people, but that they are only fitted to offer to the wealthier classes the opportunity for general improvement in harmony with the spirit of the times. The organization of preparatory classes, as "Lower Industrial Schools," is left to the respective communes wherever it may be necessary. Art Schools and Industrial Schools of a more comprehensive kind are at present to be found in Prussia only in Berlin, Dantzic, Breslau,

[1] Concerning the condition of art-industrial instruction in Prussia up to the year 1866, compare: "The Advancement of Art-Industry in England, and the Position of this Question in Germany," by Dr. H. Schwabe, part iii. p. 188, &c.

Erfurt, and Magdeburg. As for the rest, special schools in Prussia are but slightly developed even to-day; an exception is made only by the department of manufactures, in which a satisfactory advance in this respect is to be noted. But the need of such schools is becoming more apparent from year to year, and by degrees the government is likewise beginning to look more favorably upon the matter. Immediately after the war with France, the authorities of the various industrial towns of Prussia were called upon, in a circular issued by the Ministry of Commerce and Industry, *to follow the example of France in the organization of Drawing and Industrial schools; and their attention was directed to the industrial importance of these schools, and to the fact that they form the true basis of the wealth of France.* Regulations in regard to teachers of freehand drawing and modelling at the Industrial Schools were prepared at the same time.

It was impossible to judge from the Exhibition how far these efforts have since been realized. Only the "Society of Mechanics" of Berlin had provided a comprehensive presentation of its activity, as regards the organization and the development of its schools. Statistical tables, reports up to the year of the Exhibition, and the plans of the building of the society, were submitted.

Together with the lectures on scientific specialties, drawing in all its various branches receives the most careful attention in the schools of the society; and at the last International Exhibition at Amsterdam, the specimens exhibited by these schools were honored by the silver medal. As a considerable portion of the members belong to the building trades, and as a special theoretical and practical knowledge in drawing in this branch appeared to be desirable, the society in the year 1864 organized a special school for building-mechanics, divided into four progressive courses, in which the pupils were educated up to a point which enabled them to pass the examination for master-builders. The attendance was very large, especially in view of the inducement held out by the final aim of the school; and the number of the pupils is still quite respectable, although, by the new industrial laws of Northern Germany, the examination of mechanics has been done away with. According to the report, a still more suitable organization will be introduced into these special courses during the winter of 1873–74.

Of the Royal Prussian Provincial Industrial Schools, only the institution at Saarbrücken had sent specimens; and this example sufficed to show, that in the schools of this class drawing, as a rule, is undoubtedly taught by more efficient teachers than in the communal institutions. The verdict on these schools, as given at the Berlin Exhibition of 1870, in which they were represented, was almost identical. The progress from simple geometrical ground-forms to fully developed ornament, according to the wall-charts by Fürstenberg, teacher in the school at Saarbrücken, was nicely illustrated by the drawings submitted; and the method as well as the results are deserving of undivided praise. The drawings from casts, ornaments, and figures were of the most delicate execution, and, to the taste of the reporter, were finished almost too minutely "*à la lithographie*" for this purpose.

The drawings from casts by the pupils of the drawing school of the Museum Wallraf-Richartz in Cologne, under the management of its director, Niessen, were equally attractive. The delicate modulation of the form rivalled the precision of the outlines.

Specimens of the achievements of the Mechanics' Improvement School of the Industrial Society of Nassau were also exhibited, which deserved full praise, especially in linear drawing, for their exact and clear execution, as well as for the practical course of instruction. Newer and fresher motives would, however, be desirable in decorative drawing, as well as in architecture. Plenty of good things are now to be had! The course of instruction in ornamental drawing is correct.

The Prussian Educational Administration also exhibited the plans of the buildings of the Industrial Schools at Brieg, Gleichwitz, Cassel,[1] Mühlheim, of the Teachers' Seminary near Mettmann, and of the Rhenish-Westphalian Polytechnicum at Aachen, the latter in the style of the early Italian Renaissance, and of imposing effect.

As regards linear drawing in the scientific and educational institutions, it remains to be remarked, that its real use is unfortunately very generally overlooked, and that the positive results do

[1] This institution also exhibited very fine models of the framework of roofs, and a thread-model of a hyperboloid of three axes (constructed by Director Wiecke, executed by Ackermann).

not tally at all with those shown upon paper. As a part of mathematics, it is especially intended to accustom the pupils to spontaneity in severe logical thinking in space, and at the same time to habituate them to exact and careful work. Too often, however, the last point only is attended to, and brilliant technical dexterity is all that is attempted. The various problems, which the pupil ought to develop, and to solve for himself from the demonstrations by the teacher, are simply copied from examples, and thus the subject is deprived of its peculiar aim. There is nothing more deadening to the intellect of the pupil, than the copying of a drawing which he does not understand, and in which he only finds the various constructive guiding-lines, by prolonging them to the edge of the paper, and then transferring these points to his board like a scale.

Very naturally the subject is treated differently in the special schools, where the practical application is directly connected with the theory. It was regretted by many visitors, that the high schools proper, such as the Royal Industrial Academy and the Royal Building Academy, had sent no specimens of their work to the Exhibition, as they are both wont to gather an abundance of laurels on occasions like this.

The first of these institutions was called into life by Beuth in 1831, and at that time had only 13 pupils; in 1869 the number had risen to 608, but in 1871 it fell to 281 in consequence of the war. Since then it has again rapidly increased. The school exhibited only two glass cases, containing its excellent collection of models of parts of machines for the study of mechanics, which were the subject of marked attention on the part of specialists.

The pupils of the Royal Building Academy exhibited the wall-charts for art-historical instruction in use in the institution, and the "Examples and Studies" executed from the designs of Prof. C. Bötticher, a magnificent collection for the illustration of art-historical lectures as well as for studies in copying. We may mention also, that the "Grammar of Ornament," edited by E. Jacobsthal, according to the principles of C. Bötticher's "Tectonics of the Greeks," was exhibited as an aid for teaching in higher architectural schools. The students likewise exhibited the autographed drawings made by them, as studies of architectural

monuments. The publication of these drawings commenced in 1872. Besides being well-chosen and neatly executed, they offer an advantage in this, that they are all drawn to the *same* scale, which facilitates comparative study very materially. This interesting work, of which four parts have already appeared, began with antique, ancient Christian, and Romanesque architecture, and will embrace the works of the Gothic style and of the Renaissance, down to modern times. Incidentally it may be remarked, that the price of twenty-five silver groschens, for each part, is amazingly cheap.

The influence of Schinkel made itself felt to such a degree, more especially in the architectural schools of Berlin, that his spirit still animates their productions; and, if his creative power has not been inherited by his school, he has at least left to it his artistic principles. The character of the technical tendencies of architecture in Berlin was shown most conspicuously by the more important publications in this department. The world-renowned firm of Ernst & Korn truly forms the central point for the whole of Germany, for publications of this kind; and the works exhibited by it occupied nearly a whole section of the middle tract of the pavilion of Group XXVI. It would lead too far were it attempted here to review all the later issues. These works are well known to specialists everywhere, and a simple mention of the praiseworthy activity of the firm must therefore suffice.

Of other more important publications concerned with drawing and art-education, and to be seen at the Exhibition, the "Wall-Charts of Antique Life and Art," by Prof. E. v. d. Launitz, must be placed at the head of the list. The introduction of art-scientific instruction into the Middle Schools began with these charts; and through their instrumentality the question as to the necessity of this study was first fairly started. The work has been widely disseminated, and does not need any further recommendation. The "Ornaments of all the Classical Epochs of Art," by W. Zahn (1870), are very beautifully executed in color, but too small to be of use as copies. The "Ornamental Copies," by Bogler (Wiesbaden, Roth) are distinguished by simplicity and perspicuity of form; the "Ornaments," by J. A. Müller, issued by the same publisher, also deserve to be mentioned.

Domschke's "Drawing of Ornaments," in two crayons, is not as recommendable; the motives are stale, and the execution hard and black. The "Drawing-school in Wall-Charts," by Troschel, is good as far as instruction in form and in ornament is concerned; the continuation in figure-drawing is objectionable; the charts for projection are superfluous. Projection must be demonstrated by the teacher, and the figures must be drawn upon the blackboard by him.

The "Berlin Systematic Drawing School," by W. Hermes, was represented by its jubilee edition of 1872, in nineteen volumes. For amateurs these things may perhaps do; for serious instruction in drawing they are not fitted.

The various pictures for the lower grades of object teaching were surprisingly deficient. With the exception of Schnorr's Bible Pictures, none of them rose above the level of the ordinary picture-sheets for children.

Saxony. — The exhibition made in the Pavilion of Education by the Royal Saxonian Government principally embraced, according to the preface of the special catalogue, "only such aids for teaching, and other objects for educational purposes, as owed their origin to the *savants*, schoolmen, and manufacturers of the kingdom." But further on we find it stated, "that even in this respect it was impossible to present a complete picture, as only very few of the numerous and important works relating to the subject, and emanating from the university of the country and from its technical high schools, had been sent to the Exhibition."

Any further information as to the reasons for this omission was not supplied; but it appears that the question of space had prevented a more comprehensive display of the Saxonian Educational Exhibition. This can only be regretted, as it is well known, that education in Saxony, both general and industrial, occupies a very high position. In regard to general arrangements and statistics, the necessary information was given by a report which had been specially written for the Exhibition.

Industrial instruction in Saxony is adapted to the necessities of the working classes, and, compared with Prussia, the special schools have been developed much more extensively. Drawing

consequently plays a more important part throughout the Industrial Schools of the country as it becomes a necessity wherever special branches are to be successfully cultivated. The education usually received in the People's Schools is accepted as a preparation by most of these institutions; the courses extend through three years (in winter only), the pupil continuing to work at his trade in the mean time. This is the case, for example, in the Building Trades Schools of Chemnitz, Leipsic, Plauen, Zittau, and Dresden. Saxony also possesses a considerable number of Weaving Schools, among which those at Chemnitz, Glauchau, Frankenberg, Oederna, Werdau, Gross-Schönau, Hainichen, Limbach, and Mittweida are the most prominent. The wooden-ware and toy manufactories of the Saxonian Ore-Mountains have also received some attention of late, and drawing and painting schools have been opened in Seiffen and Grünhainichen for their benefit.

As previously remarked, there was little to be seen of specimens by the pupils, only the Technical High Schools at Dresden and at Frankenberg having made a display of any extent. Drawing-copies, models, and other aids for instruction, made up the rest of the exhibition.

By the People's School law of 1873, drawing has also been made compulsory in the lower schools, in some of which, however, it had already been carefully practiced before. The drawing-copies of H. Schmidt and W. Zimmermann (teachers in the Middle Schools of Zwickau) must here be mentioned before all others as very superior aids for teaching in the first stages of instruction. According to Schmidt's method, the simplest geometrical ground-forms are drawn upon the blackboard by the teacher, to give to the pupils an insight into the formation of the figures; at a later period, the more complicated forms, together with their guiding-lines, which are given in red, are copied freehand from examples. The lines of shadow must be found by the pupil himself, the teacher having previously explained them, after which the back-ground and intermediate planes are filled in with flat tints.

Zimmermann's copies pursue the same method on the whole. The forms are marked in strong black outlines, and relieved by colored tints, which adds measurably to their distinctness at a distance. The guiding-lines, which the pupil must erase after he has sketched his drawing, are given in red dots.

These methods banish all mechanical aids, and aim at the education of the eye, as well as of the hand. As a basis for the copies in question, which are exemplary as far as method is concerned, the "Little Draughtsman," by F. W. Tretau, professor in Chemnitz, has been used, while, for the ornamental forms, the works of Herdtle and Weishaupt have principally been drawn upon. The results of instruction in drawing in the Real-School at Zwickau deserved the fullest praise in every respect. In the higher classes of this school, the transmutation of forms, as an exercise in composition, is also practiced with very good success. By filling in the intermediate spaces between the flat ornamental designs, the drawing receives a more lively appearance, and, at the same time, the pupil is given an opportunity to accustom himself to the use of the brush. In the first class of the same institution, drawing is practiced from the Dresden casts,[1] on paper of a light tint, color being again used to subdue the background. The Girls' Improvement School of the same place submitted very creditable specimens.

The specimens by the pupils of the Real-School in Chemnitz were less attractive, no definite plan of instruction being apparent in them. Among the specimens there were also studies of the effects of light and shade on geometrical bodies, executed on a large scale in crayon, which takes a good deal of the time of the pupils, and is of little use to them. The Citizens' School of Werdau, and the State School of Planitz, on the contrary, had very pretty specimens to show, which permitted a clear insight into the course of instruction.

The specimens of drawing exhibited by the schools of Dresden made it evident, that in the capital of the country, more than elsewhere, this branch of instruction is still very unsystematically cultivated. Flowers, painted landscapes, even whole human figures, were to be met with in the lowest classes; besides these subjects, projection and perspective are practiced, which ought not to be expected of children of such tender years. The school of the eighth district probably went farthest astray in this direction, as it exhibited large heads after Julien (stumped) together with

[1] These casts are described on p. 75. — *Transl.*

landscapes after Hermes. Better results, with a more systematic course of instruction, were shown by the first Citizens' School, the First Communal School, and the Free School of the society, "Zu Rath und That" ("for council and help"). In the Girls' School, a good beginning is made with Fröbel's drawing-method, but the road to a clear comprehension of form is blocked too quickly by taking up flowers and landscapes.

Of the Teachers' Seminaries only the one at Friedrichsstadt-Dresden had exhibited drawings, showing the course of instruction in four stages. A beginning is made with Tretau's "Little Draughtsman," which is succeeded by Herdtle's ornaments, and eventually by drawing from nature, at first from geometrical wooden models, and then from ornaments in plaster.

Besides the drawing-copies alluded to as being in use in the schools of Zwickau, the plastic "Models for Freehand Drawing and Modelling," issued by the Royal School for Modelling and Pattern-Drawing in Dresden, must also receive honorable mention. These models were designed by Profs. Krumbholz and Hänel, and are intended to continue the instruction in drawing, from the elementary stage up to the round. The collection consists of three series, — the first embracing leaves in symmetrical as well as in natural arrangement, together with ornamental motives, these latter principally in the style of the Italian Renaissance; the second series comprises larger details of ornaments in successive development, up to complete ornaments (in the same style) with reference to their local application; while the third series embraces pure severe ornamentation on the one hand, and examples of a naturalistic tendency on the other, thus demonstrating to the more advanced pupils how plant-forms may be utilized for ornamental purposes. The publication of this collection was not undertaken as a business speculation. The models owe their origin, in the first instance, to the necessity of providing the institution which produced them with good plastic examples, fitted to educate the taste and the feeling for the beautiful; and, as it was desired to enable other institutions to share in the benefits to be derived from the use of the models, the price of the casts (executed in the casting-shop of the institution) has been placed so low that even the poorer schools can afford to buy them. Series I. (twelve models)

costs six thalers; Series II. (twelve models), nine thalers; Series III. (nine models), ten thalers.

The choice of motives in these models, and their systematic grouping, must be called excellent, while the execution is truly exemplary. In original models even, the edges are but seldom found as sharp and as clean as in these casts, which are herewith warmly recommended to all institutions.

Other smaller works by various authors, which were likewise exhibited, did not offer any thing specially noteworthy. Seltmann's models for instruction in drawing (wooden solids of various shapes capable of forming a variety of figures) are somewhat clumsy. Fröbel's useful stigmographic copies for the first stages of instruction are well known. As aids for object teaching, there were exhibited the Bible Pictures, by Schwarz and by C. Ehrenberg; also "German History," in pictures by various authors, and Overbeck's magnificent "Atlas of Greek Art-Mythology," for the higher educational institutions. Two volumes of this extensive work, "Zeus" and "Hera," have so far been issued.

The Royal Polytechnic School of Dresden exhibited specimens by the students ranging through all the branches of technical drawing, together with models of bridges. The specimens by the mechanical section were especially interesting, including a large number of plates which represented the machinery of a flax-yarn spinning-mill, and of a paper-manufactory. The engineer section submitted a project for a bridge across the Elbe at Dresden, plans for railroads, viaducts, geodetical work, &c. Among the models there were many which were executed from the designs of Dr. E. Winkler, now professor at the Viennese High School, while he was yet assistant at the Dresden school.

The Polytechnicum of Frankenberg likewise exhibited the achievements of its students in beautiful arrangement, embracing numerous portfolios and books from the preparatory class (mostly studies in descriptive geometry), and excellent specimens from the special schools (principally machine-drawings).

The exhibition of Saxonian toys, arranged by the commission for the advancement of this branch of industry, must also be mentioned. A well-justified effort is now making, to give even to the first pictures put into the hands of the child a character which

will awaken a feeling for form; and to reach this end it will also be necessary to introduce a better taste into the toys manufactured for commerce, so as to educate the eye to a feeling for the beautiful. In the Saxonian Ore-Mountains, this industry has been traditional among the people for hundreds of years, and its produce is scattered all over the world. The commission alluded to is endeavoring gradually to improve it, — a beautiful idea, which deserves full recognition.

It has been before remarked, that the absence of the work of the pupils of the Saxonian Improvement Schools was greatly to be regretted. The careful attention paid to drawing in the Industrial Schools of Saxony was made apparent by the report of the Royal Saxonian Educational Administration (pp. 27–33), previously cited, in which the organization of the various institutions, their division into categories, &c., was explained in detail.

Hessia. — The Grand Duchy of Hessia exhibited almost nothing but specimens by the pupils of the Artisans' and Improvement Schools. These institutions, the first of which were opened in Darmstadt, Mayence, and Giessen in 1838, have increased considerably since then, so that now each little town in the country possesses one of them. The attendance is voluntary everywhere; and, until quite lately, the instruction, to which apprentices and journeymen are admitted, was gratuitous; at present, the pupils are charged a moderate tuition-fee (six to thirty kreutzers per month), but the notoriously poor are exempted from its payment, and in some of the schools are even provided with the necessary writing and drawing materials free of charge.

The main stress in instruction is laid upon technical drawing, to which are added the other branches, such as geometry, arithmetic, style, &c., with reference to practical wants. In view of the shortness of time, the schools confine themselves to that which is the most necessary and useful for the working-man, while the branches of education of lesser importance are passed over. No premiums are given to the pupils; but every year their work is submitted to a special commission, by whom it is examined, and reported upon. The general part of this report is published, while the part devoted to special criticism is communicated confidentially to the school-committees and teachers.

The Hessian Industrial Association has rendered great service to these schools, whose influence upon the industries is so beneficial. The first impetus toward their organization was given by this society, and it has since done all in its power to advance the schools, and to increase their number. But the most important part of its activity consisted in the encouragement which it gave to the publication of practical and suitable copies. The basis for this excellent collection for all branches of industry was laid by the former secretary of the society, the present Grand Ducal Upper Building Councillor Rössler. The "Drawing Copies for the Artisans' Drawing Schools in the Grand Duchy of Hessia," as well as the "Technical Designs, and Designs for the Various Branches of Industry," which were issued at a later period, have gone through repeated editions, and have been disseminated far beyond the limits of the country for the schools of which they were originally designed. By reason of their simple, practical representation, they will always remain an excellent aid for teaching in all industrial schools. The activity and the care which the society in question has devoted to the advancement of the industries were most beautifully illustrated by these examples at the Exhibition.

In view of the fact that these schools have evening and Sunday courses only, the work of their pupils must not be criticised as severely as if it were the production of day-schools; it showed honest, conscientious effort throughout, very generally also accompanied by good results. Machine-drawing is principally cultivated; but some of the schools exhibited also very neat freehand drawings from copies and casts. For the benefit of technical linear drawing, it would appear desirable, however, to pay more attention to projection; many of the schools were very deficient in it. Very good exercises were to be seen in outline ornament, which is more useful than painstaking finish in shading, wherever there is lack of time, even for the better schools.

Of further aids for teaching in drawing, the models by J. Schröder again held the first rank, the same as at previous exhibitions. This rich collection contains representations in geometry, descriptive geometry, machine building, stone constructions, railroad building, carpentry, metallurgy, and agriculture. Schröder's insti-

tution is so well known everywhere by its excellent productions, that a detailed description appears to be quite superfluous here.

Frederic Lösser also exhibited models for instruction in descriptive geometry, the solids being of wood, and placed upon planes, upon which their projections were drawn, together with the construction-lines. Very instructive apparatus for perspective, by the same author, must likewise be mentioned.

Large wall-charts for elementary instruction in drawing were exhibited by J. Kumpa (published by W. Peyerle, Darmstadt), which progress systematically from simple geometrical elements to ornament. The forms are broad, delineated in a dark tint upon white, and the work can be highly recommended for the first stages of instruction.

Besides the Industrial Schools, the Real-School of Darmstadt was also represented by specimens from the hands of its pupils; and, indeed, very successfully. The lead-pencil, however, would be preferable to the crayon for the first stages. But the verdict upon the manner in which drawing is continued in this school must be less favorable, as there is no fixed principle. This is true, even in a still higher degree, of the Gymnasium in Darmstadt, by which drawings had also been sent.

Hamburg. — There is hardly another city in Germany at present, in which drawing is taught as carefully and as conscientiously as in Hamburg. By the united action of the intelligent and capable teachers employed in the General Industrial School of the city, a definite method of teaching has developed itself in this institution (now also introduced into the People's Schools), which deserves to be called exemplary in its well-ordered, gradual progress. The favorable impression made upon the visitor by the exhibition, was not, however, to be alone attributed to the excellent results which were shown, but also to the painstaking arrangement, the conscientious adjustment of the whole, by means of which the aim of the exhibition — to give an insight into methods and results — was completely attained. There were on exhibition specimens of the achievements of the Elementary Schools, the General Industrial and the Building Trades School, and of the Industrial School for Girls; the systematic course of instruction

was shown by the usual drawings, arranged upon revolving stands. Before entering upon our review, we will endeavor to give a short general sketch of the organization and the arrangement of the institution under the excellent management of O. Jessen.

The General Industrial School in Hamburg was opened in 1865; its aim being to provide the scientific knowledge and artistic education which is necessary to all who are engaged in industrial pursuits, but which cannot be acquired in the workshop.

Alongside of the other scientific and commercial branches, the widest field is given to drawing; and, taking the various classes together, not less than 218 hours each week are devoted to it, which are distributed as follows: —

	Hours.
Freehand drawing	66
Drawing with the aid of compasses	28
Special drawing for building-mechanics, joiners, &c.	8
Special drawing and lecture for shipbuilders	6
Special drawing for machinists, locksmiths, &c.	8
Special drawing for tinsmiths, &c.	4
Special drawing for painters, sculptors, &c.	12
Special drawing for lithographers	8
Drawing from living plants and animals	8
Forms and color applied to art-industry	2
Drawing and designing of ornaments	8
Decorative painting	10
Modelling in clay	6
Elementary drawing for boys	44

Instruction is given on week-days from five to nine in the evening, and on Sundays from eight to twelve in the morning.

The School for Building-Mechanics, under the same management, offers a thorough and comprehensive theoretical education, and special training in drawing. The complete course can be finished in three winters; 112 hours each week are given to drawing, which are divided among the various branches as follows: —

	Hours.
Freehand drawing	30
Drawing with the aid of compasses	10
Descriptive geometry	18
Architecture, construction, estimates, working-drawings	54

Instruction is given daily from eight o'clock in the morning until seven in the evening, with the necessary intermissions.

In the General Industrial School there are also three additional courses of elementary drawing for boys.

Yearly exhibitions of the work of the pupils are held at Easter, but no premiums or other marks of distinction are distributed.

In the united institutions there are at present employed, besides the director, 18 teachers, and 15 assistant teachers. The number of pupils rose to 1161 in the winter half-year of 1872–73. This number is sufficient evidence of the practical management of the institution, but its excellent reputation is mainly owing to its success in drawing.

The method of elementary instruction may be briefly stated as follows: The pupils begin with drawing in squares, practicing the straight line in the various directions, in its combination in frets, borders, &c., progressing gradually to more complicated star-shaped figures. The teacher draws upon the blackboard, which is divided into squares, the pupils at the same time drawing upon slates, and at a later period into books. This is followed up by a short but thorough exercise: 1, changing a figure into its opposite; 2, transformation of the opposites; and, 3, combining new forms. Finally the teacher also causes the pupils to draw figures into the squares, from figures which he has drawn upon the blackboard without squares. At this stage the instruction therefore adheres in general to the principles of Fröbel.

The next thing is drawing from printed wall-charts, at first in classes, then in sections, and at last individually. Instruction in drawing is separated from systematic instruction in the knowledge of form. The wall-charts offer only plane figures in front view, and without guiding-lines. The latter must be found by the pupils themselves under the direction of the teacher. A commencement is made with straight-line figures, which are drawn simultaneously upon the blackboard by the teacher (from Dr. Stuhlmann's Wall-Charts), and these are followed up by curvilinear ornamental forms (from the Wall-Charts by H. Wohlien).[1] When the pupils have acquired the necessary skill in these

[1] According to a private communication H. Wohlien's charts only will be used in future.

exercises, drawing from objects is taken up with each pupil individually.

Each pupil (sometimes also two or three) draws from a separate model, which is placed before him at a distance of from 1 to 1.5 metres.

The pupils must acquire the facility of discerning, estimating, and representing the changes caused by the perspective by means of simple observation in gauging with their lead-pencils. The beginning is made by F. Heimerdinger's wooden models; these are succeeded by simple models in plaster, and by utensils, with reference to light and shade.

In the upper sections of the girls' classes the drawing of designs for embroidery is added to the previous subjects, the pupils being first made acquainted with the most important elementary forms, then led to the application of a given form to various uses, and finally instructed in the making of original designs.

In the Industrial Schools, drawing is practiced from models only, at first simply in outline, then gradually progressing to shading, the various means of representation being employed in the course of the instruction. Figure-drawing is practiced only by those whose calling requires it.

The specimens exhibited gave proof that all branches of drawing receive careful attention in the institution, that the study of ornament is supported by the study of plant-forms, and that the incitement to self-activity in composition is not neglected.

The objects exhibited by the pupils of the special courses for decorators, joiners, &c., showed in the practical, simple construction of the forms, and in the correct formation and application of ornament, that the school follows with zeal in the track of the reformatory tendencies which are making way for themselves in England and in Austria. In the drawings of the objects, which drawings are not to be used as pictures, but are produced simply with a view to their practical execution, the readiest means are employed, and all superfluous painting and time-taking finish is avoided.

Drawing and modelling only are practiced in the institution; and it is left to the opportunities and to the diligence of the individual pupils to execute in their shops the designs which they

have made in the school under the direction of their teachers. This is a very excellent means of transplanting the advantages of the school directly into the industries, and thereby keeping alive the interest in the school among the tradesmen. Several objects were on exhibition which had been produced through the instrumentality of the institution in this manner, and which gave evidence of a very refined taste. Specially prominent among these objects were the works of the joiners. In modelling (plaster and wax) ornamental and figure subjects had been executed, and the exact, severe treatment of the forms deserved all praise.

Linear drawing is carried on quite as systematically as free-hand drawing, and the geometical constructions always find their application in practical examples. Truly excellent work was especially shown by the School for Building-Mechanics, which also exhibited very pretty architectural designs. The execution of the drawings was as precise as it was simple; and so-called exhibition-drawings, only calculated to catch the eye of laymen, were nowhere to be seen.

The St. Pauli Industrial School, which is under the care and the administration of the General Industrial School since 1870, also submitted very good work.

Although the Industrial Schools of Hamburg were not brilliant in pompous tableaux, rather contenting themselves to exhibit their achievements to the public in a more modest form, they nevertheless attracted the attention of specialists to a high degree, and gave thorough satisfaction on all sides, for the very reason that their appearance was so unostentatious.

The institution sent almost all its teachers to visit the exhibition at Vienna; and the increased experience there gathered will no doubt contribute to the further development of the schools.[1]

In 1867 there was also opened in Hamburg a Girls' Industrial School (instruction during the day), which embraces all the branches of general education, and in which drawing is likewise cultivated

[1] It was only to be regretted that the Hamburg Industrial Museum had but a limited supply of funds to make purchases of art-industrial objects at the World's Fair. In this respect the collections of Germany, Austria, and Russia had been more abundantly provided for.

with especial care. In the higher classes of this school attention is devoted more particularly to the designing of patterns. The instruction commences with the representation of simple linear ornaments, borders, &c., executed from slight sketches; and this is succeeded by attempts at composition, for rosettes, decorations for flat surfaces, &c., in their application to the dress, and for other domestic purposes.

The drawings and finished objects which were exhibited gave evidence of surety in the handling of form, and of a healthy feeling in original composition. Many of the patterns invented by the pupils of the institution have found their way into various journals of fashion. The specimens by the pupils of the "Society for the Advancement of Female Industrial Activity" likewise deserve honorable mention.

The Girls' School of the Women's Society in Paulsenstift also submitted drawings, which illustrated the practical character of the method in use in Hamburg.[1]

[1] *Industrial Schools at Hamburg.* — According to the last yearly report (1874) of the "*General Industrial School, and School for Building-Mechanics,*" the city of Hamburg has voted eight hundred thousand thalers (about six hundred thousand dollars), for a building which is to accommodate the school in question, together with the Hamburg Real-School and the Industrial Museum. The rooms set apart for the Industrial School will embrace nineteen drawing and modelling halls, seven class-rooms for scientific instruction, several rooms for collections, and the necessary offices, &c. The great service which the Industrial Museum renders to the school is fully acknowledged in the Report, and the importance of instruction in drawing in the People's Schools is thus alluded to: "It is of equally great importance to the activity of the Industrial School, that instruction in drawing is carried out rigidly and systematically in the Hamburg People's Schools. Even now (i.e., after drawing in the People's Schools has been taught only a short time) many of the pupils come to the school with a much better preparation than heretofore; and it is therefore possible to make good draughtsmen of them while they are still apprentices." The "*Industrial School for Girls*" also possesses a building of its own, which was commenced in 1872. This school was called into life by the "Society for the Advancement of Female Industrial Activity." Being a private enterprise, the cost of the building, one hundred thousand marks (about twenty-five thousand dollars) was raised by subscription; but the city donated the land (twenty thousand feet) upon which it stands.— *Transl.*

FRANCE.

With no nation has drawing, as such, played a more important part, for upwards of a century, than with the French. In truth, it might be said, that their wealth is owing principally to their drawing-schools, which are the mainstays of their industry, even to-day. We would have to go far back into the past did we wish to seek for the causes which have enabled the French to raise themselves to the mastery of the world in the departments of art and of art-industry, and to maintain themselves as the recognized leaders of taste down to the very present. The first impulse towards the emancipation from blind submission, on the part of other nations, was given by the contests at the World's Fairs; and, under the leadership of art-science, a campaign was opened against the weaknesses and the defects of established French custom. England energetically took the lead; Austria and Germany followed, the latter, however, only in part. Thanks to the Museums and Art Schools, the reform, which took its rise at the London Exhibition of 1851, has advanced victoriously thus far, and has produced a change of forms, even in France. But with the French — highly-gifted artistically as they are, and with past successes upon which they can justly look with pride — the inherited traditions are too strongly rooted to make a rapid revolution possible.

It cannot be gainsaid that all efforts in the direction of art, although they arise unconsciously in every civilized nation, can be superintended, directed, and fostered much more readily to-day than in former times. This is first of all owing to the fact, that, as a result of the great activity displayed in the field of art-scientific research, the classics of the past have been put at our disposal, and can be used as a means for the education of taste by being presented to the people in collections. But besides these we have

also the drawing-schools, or, more generally speaking, instruction in art, by means of which a direct influence can be brought to bear upon the productions of art and of art industry. In England and in Austria, these means for the reform of taste are in successful operation. In France, museums and collections have, of course, been in existence all along, but they were only called to mind again, as a means of art-industrial education, by the opposition which used them as a basis of operations in its warfare against inherited French traditions in matters of art. The energetic efforts lately made in France to exert a purifying influence upon the education of taste, by instruction in drawing, cannot be mistaken. But little value was formerly attached in the French drawing-schools to the cultivation or the perfection of any definite tendency in style. The celebrated national art of the French was brilliant only in technical dexterity, in the facility of imitation, in exterior qualities, in all of which it stands unsurpassed, even to-day. Henceforth, however, the position of their industry will depend upon the measure of success with which they may apply their technical skill to scientific and purely artistic efforts. Undoubtedly the competition at the Exhibition of 1873 has again exercised a far-reaching influence upon France.

The fact that the external qualities — the easy and the graceful on the one hand, the pompous and the theatrical on the other — should have principally developed themselves in the art of France, while deeper feeling and psychical qualities are wanting, will find its explanation in the history of French art itself. Instead of having its sources in the poetical necessities of the people, it was trained by the courts in the service of luxury. It is characteristic, that, even in the period of the Renaissance, only those elements of the Renaissance style found entrance through the South of France, which, in the shape of ornament, were nothing but the wanton outgrowth of the noble forms of that brilliant epoch.

The enthusiasm for the grand creations of grave art found no reflection in France. The graceful and elegant decorative elements alone were accepted; and these, being without a firm basis, soon grew shallow and degenerated. Fontainebleau may be said to mark the beginning of specific peculiarities in French art, which afterwards, during the period of the Baroque style, devel-

oped themselves still further in the most pompous and theatrical manner. Nevertheless, however emphatically we must protest against the hollowness and unmeaningness of French art under Louis XIV. and Louis XV., with its useless waste of means, and however objectionable we may regard it with respect to taste, we cannot deny, that, through the liberal encouragement of art on the part of the courts and the aristocracy, the French artists of that time had already attained a technical skill which is truly admirable, even in the works of the Baroque style. In art-industry especially, and in sculpture, which stands nearest to it, their achievements were most brilliant; and the traditions of these successes have been preserved even to this day. Painting pursued a more independent course. With the period of the Revolution, a great change began in all departments of art. The first empire constituted the period of classicism. What David was for painting, Canova and Bosio were for sculpture. But painting subsequently veered around into romanticism, and, during the second empire, turned completely into realism. Sculpture, however, retained the forms of the antique, but also, to a great extent, the hollow pathos of the Rococo.

And how were industry and ornamentation affected? Nature, pure and simple, was combined with the elements of the Rococo. She was copied literally. The ornament became every thing; and, as a necessary consequence, the ground-form of the object was totally neglected; the feeling for, and the comprehension of, the form in relation to its purpose, was lost, and the materials were applied in the most disgustingly false manner.

Contrary to all this, the aims of the present reformatory movement may briefly be stated to be the following: the artistic construction of the ornament; its organic development from the forms of nature; due regard to practical use in the ground-form of the object; and the correct application of the material employed.

How far, then, has this purification of forms in industry progressed in France since the last Exhibition? What means are employed in the schools for the purpose of encouraging further development in this direction? And what may possibly be the result of such a revolution in instruction on French art proper? These are the main points, which the reporter kept in view in

examining the aids for teaching, specimens by the pupils, &c., which were to be seen at the Exhibition.

Dark days intervened for France between the years 1867 and 1873, and the fury of war rudely compelled the studios and the workshops to pause. But in spite of these drawbacks, the country appeared in the arena of labor at Vienna most gorgeously decked. In art (painting and sculpture) not much that was new was to be seen, the traditional character being represented on the whole; but in industry an important advance in the revolution of taste was to be noticed. The style of the time of Louis XV. is, indeed, still dominant; flowers and plastic ornaments are still to be found where neither of them belong; but, nevertheless, forms of well-defined style are gaining ground step by step, and the architectonic, which used to be tabooed, has found its way into designs for textile fabrics, into bronzes, faiences, &c. That the elements of the reform have not yet been adopted to a greater degree, and that the imitation of old, and especially of Oriental art, is more generally preferred, may perhaps be owing to national pride, which at present is more irritated than ever. In these imitations, however, in consequence of the national character, the effective is frequently preferred to the beautiful.

We must now endeavor to answer the following questions: What is the prevailing tendency in the schools in regard to style? And what position does art-instruction in general occupy in France at present?

As regards the first question, the most important point, which we will have to place above all others, is this: "*What* is it that is drawn in the schools?" for the practical draughtsman will finally express himself in the forms in which he was trained, or will at least find pleasure in them. The importance attaching to copies, models, &c., has long been recognized in France, and for decades Parisian firms have ruled the world by the drawing-copies published by them.

Julien, with his numerous works, was the leading author until after the year 1850, and not in France alone. His smoothly-executed heads, his showy ornaments, — taking to the eye, but of doubtful value for rational instruction, — were to be found wherever there were drawing-schools. With such models figure-drawing

must of necessity go astray; an observation which was again confirmed at Vienna by the specimens exhibited by those institutions in which the older publications of this author are still in use. Besides Julien's copies, there were also employed simple ornaments (of which those by Bilordeaux were perhaps the most elegant), and, above all, studies of flowers. Standard examples of the latter class were produced quite early, and are still being produced; for in them lies the most important element of industry.

Now came the World's Fairs, and competition demanded forms of greater precision in industry. But these could be introduced only by new means of art-instruction.

The revolution that has been consummated in the department of art-instruction in France, within the last few years, is a most portentous sign of the gradual revolution of taste in French art-industry. Drawing-copies no longer spring into existence out of the imagination of individuals; a stricter method is pursued in the selection of motives, and a return to the classics has taken place. The firm "Julien" itself brought out "Etudes d'après l'Antique;" but these unfortunately were again too bold, too broad in treatment, to be useful as standards in the elementary stages of figure-drawing. In ornament the Renaissance was at first gone back to; but finally motives and forms from the whole range of art-history were presented in the copies, beginning with the Hindoos, Egyptians, &c., and reaching down to the latest Rococo. The imitation of the most varied styles in modern French industry may have some connection with this fact. A number of prominent publishers, such as Delagrave, Delarue, Ducher, Monrocq Frères, Baudri, Morel, &c., have produced truly magnificent works of this kind. The return to classical examples, and more especially to the antique in figure-drawing, has continued to increase since the last Exhibition; and the government of France, even up to the present time, has given its support to these efforts. To be sure, the fruits of this movement, generally speaking, are not visible as yet; but it must be acknowledged that energetic efforts are making everywhere to introduce purer elements into form.

Of the latest publications to be seen at the Exhibition, mention must be made before all of F. Ravaisson's "Classiques de l'Art, Modellés pour l'Enseignement du Dessin." Most of the

photographs of which this series consists are taken from the classical plastic works of the Louvre, the rest being from drawings by the old masters; and they are treated in a manner which makes it easy to copy them in crayon or other material. An excellent management of light, together with well-chosen backgrounds, give the greatest lucidity to the form, especially of the plastic objects. The work embraces two hundred plates, but is unfortunately too luxuriously gotten up to enable it to come into general use. Price, eight francs each plate.

In accordance with a desire of the government, it is to be introduced into all the Drawing-Schools, Lycea, &c., of France, for the purpose of purifying taste by means of the antique, and of giving unity to ideas on art. For the present, however, only a few of the Parisian schools possess it. In the provincial cities, where the older elements are as yet more deeply rooted, these modern efforts are sometimes forced to contend against gross prejudices.

The "Cours de Dessin par Ch. Bargue (avec le Concours de Gérôme)" outdoes all earlier productions, although it is more general in its tendencies. The first part contains sculpture from antique models in exceedingly delicate, picturesque treatment; the second part brings us faithful copies from classical works of various kinds, drawings by the old masters, &c., of all epochs, among which the "good" German masters have not been forgotten. The execution is slight, but exact, and in only one crayon. These superior examples (published since 1868) have already found their way into many of the Austrian schools; and their general introduction is most desirable.

The "Exercises au Fusain pour préparer à l'Étude de l'Académie d'après la Nature" (Hachette, 1871) can be put to excellent use in higher drawing-schools, as a preparation for academical studies. The work consists of sketches only, and special attention is devoted to quick comprehension and correct proportioning of the figures. Among the publications of Monrocq Frères, the "Grand Cours d'Animaux," by H. Lalaise, is to be singled out; the execution is somewhat bold, but the forms are rendered with considerable knowledge. The "Modèles d'après la Nature," by J. Ducollet et Felon, on the contrary, go back again entirely to Julien's manner.

Of ornaments the "Cours d'Ornement," by Lièvre (Goupil, 1868) must be placed at the head of the list, as being superior in its choice of motives. The objects — original models in all styles — are represented in a manner easily comprehended, on paper of a light-gray tint, in crayon underlaid with the stump.

With examples of this kind, it is indeed easy to teach the styles in the drawing-classes. A similar work, but one which embraces the history of art still more fully, is that of Camille Chazal (Hachette). The first plates represent Egypt in figure, ornament, and architecture; the Orient follows in a similar manner, then the classics of antiquity, and so on down to the Renaissance. In the last part, on French art, the object of the plates, to serve as drawing-copies, has unfortunately been lost sight of somewhat; the smaller *genre*-pieces might have been left away quite as well. The work compiled by the meritorious Frère M. Victoris, "Enseignement Populaire du Dessin d'Ornement," intended for elementary instruction in ornament-drawing, is carried out in a similar spirit. The motives are given in outline with geometrical lines, lightly shaded, and in historical order. This work has been introduced into most of the primary schools which are under the care of the "Congregation of the Brethren of Schools;" farther on, we shall have to speak of its successful employment in instruction. In the same schools, the "Cours d'Ornement," by the Frère Athanase, conspicuous for its easy, elegant execution, is likewise frequently in use. The forms begin at once upon the first plates with palmettos, spiral lines, &c., and advance to motives of moderate difficulty, which are culled from the classical monuments of the Renaissance, of the Greeks, Romans, and Etruscans, and of the Gothic style. They are executed in *one* crayon on paper of a light tint.

Series of copies for the first stage of instruction have been produced in Paris in large masses of late years; and, on the whole, it may be remarked, that the principal aim held in view, even at the very beginning of instruction, *is an artistic and free manner of expression*. The question here is not — and *this is the essential difference between French and Germans — the exposition of the form, its geometrical construction*. The straight line is quickly done away with, or is simply omitted; and all efforts are at once

directed upon the object of instruction, i.e., on freehand ornament in its development. Long practice of outlines as such is very seldom seen.

As it is the aim of all French art to interest, to grasp the moment in its focus, and to please the eye by a wealth of variety, it is not strange that we should find this national trait distinctly expressed even in the first aids for teaching. It must undoubtedly be beneficial in many respects, if, during the earlier years of childhood, the imagination is fed upon forms which have been taken directly from life, and if the drawing-book answers first of all the purposes of an instructive picture-book, while at the same time it offers an opportunity for the ready imitation of the forms. To awaken and to retain the interest for the beautiful at a time when the activity of the mind still unfolds itself more or less unconsciously, is certainly a piece of pedagogical legerdemain; but success may surely be counted upon if the material selected for instruction is made to conform closely to the instinctive elements in human nature. Drawing, the same as any other subject, demands a certain maturity of mind for each of its stages. *Learning to see*, however, which is the principal discipline in drawing can only be attained by means of highly developed and adequate object-teaching.

Of later publications for the first stage of instruction in form, we must confine ourselves to those issued by the more prominent among the active Parisian publishers. "L'Écolier Parisien, simples Modèles de Dessin avec Esquisse" (Monrocq), offers, in small books, a collection of the more simple forms in the various branches of drawing, and, according to the motto upon the titlepage, aims at instructing the hand in drawing lines, and educating the eye for form. The figures are executed in vigorous outlines, and are repeated at the side towards the right, in fine lines, which at first are simply to be gone over; later on, the pupil copies more independently. The low price (ten centimes each) at which these books (sixty thus far) are sold, is astonishing.

"Le Dessin pour Tous (Methode Cassagne)" is similarly arranged, but in addition the books are furnished with a short explanatory text. The whole work, indeed, far exceeds the ex-

ecutive ability of the children for whom it is designed (this may be remarked more especially of the "Études du Genre"), but its purpose is to train the eye, rather than the hand, in the matter of form, and principally to acquaint this organ with the most important and the most beautiful in art and in nature. Besides this, the firm of Monrocq Frères, which is exceedingly active in the field of instruction in form and in drawing, publishes a journal, "Le Petit Artiste" (1st and 15th of each month), in which motives from all departments of drawing, with a short text, are presented in the greatest variety. Whoever turns over the leaves of the volumes thus far published will be forced to acknowledge, that the choice, as well as the execution of the objects, which is sometimes quite artistic, are well fitted to create an interest, and to be practically useful in teaching the knowledge of form. Luzanne's slate-copies are likewise a very recommendable means to interest children in the imitation of forms. The drawings are executed in red lines on the left half of the slate, and are reflected, by means of a glass plate placed vertically, upon the other blank half, where the outlines are gone over by the hand of the pupil. The "Cahiers d'Enseignement Pratique du Dessin," by J. Carot, the "Cahiers Esquisses de Dessin d'Ornement," by A. le Béalle, as well as the works of J. Bardin, L. Grunblot, Blery, &c., are already devoted to higher aims in drawing-instruction proper; and it needs only to remark in general, that the plastic ornament prevails everywhere. The natural flower gradually steps into the background. Landscape likewise is very properly excluded from elementary instruction; and, indeed, since Calame's incomparable lithographs, nothing prominent in this *genre* has appeared. Strange to say, very little has as yet been done for elementary figure-drawing. It is evident, that art-instruction in France is bent especially upon the practical, upon industry, in which department truly magnificent works have been published, and in which the Parisian publishers, in spite of the efforts of the English, still stand unsurpassed. The space at command would have to be exceeded, if only the most prominent were to be mentioned. These works have been given to all the world; and it must be sufficient here to have drawn attention to them.

For instruction in linear drawing, numerous works were also

exhibited, all of which, however, moved in the same track, i.e., after the general part, aimed immediately at practical application. Here, again, the most prominent work was the excellent "Cours de Dessin Géometrique et Industriel," by the Frère Victoris, which was already favorably known from the Exhibition of 1867. With it there were also exhibited the models (of plaster and of tin) belonging to it. Mention must also be made of the "Dessin Linéaire Industriel appliqué à la Mechanique et à la Construction," by M. S. Petit. Of geometrical models there are still to be noted the practically arranged collections of Rives, Delagrave, A. Julien, and others. They offered nothing new, however. Hachette & Co. exhibited wooden models for descriptive geometry and stone constructions, and small models of machinery. The "École Professionelle" at Evreux had sent a variety of models for locksmiths, joiners, machinists, &c.

Having given a general idea of the tendencies to be observed in the copies, &c., lately published, we will now turn to the schools, i.e., to drawing-instruction itself, and, in reviewing the drawings by the pupils, we will likewise consider the methods, arrangements, aims, &c.

It is well known that educational matters in France, even today, leave much to be desired, and that, in spite of the efforts of the government, the communes, and of humanitarian societies, they are still in a very defective state. Compulsion has not been carried through; and thus it happens, that even in the metropolis, in Paris, it is a rarity if children of the poorer classes attend the elementary schools for a longer period than three years. According to the figures given in a report of the Chamber of Commerce of Paris in 1867, twenty-five thousand children still of the school-age were at that time drawn away from school by the Parisian manufactories and other establishments. But this number has increased considerably since.[1]

That drawing does not play a prominent part in the People's Schools, will therefore be readily understood. Still the subject is

[1] According to a report of the "Société pour l'Instruction Elementaire," of the year 1870, there are two millions of children in France who receive no instruction whatever, and fourteen millions of adults who can neither read nor write.

cultivated in many institutions (as an elective study), and in Paris especially a teacher of drawing is employed for the Municipal Schools of each *arrondissement*.

In the Elementary Schools under the charge of the "Christian Brethren," drawing is cultivated incomparably better and more systematically. Although the method here is likewise left to the choice of the individual teacher, a certain system, more or less successfully carried through, has nevertheless been generally introduced through the copies published by the congregation itself. On the average, the children begin to draw at the age of from nine to ten years, freehand and linear drawing being treated as totally separate branches. In freehand drawing, geometrical forms are therefore omitted, and, as before stated, rhythmical ornament is immediately aimed at. The copies most in use are those already named, by Victoris and Athanase, partially also those of J. Carot. The teacher executes the drawing in hand upon the blackboard on a large scale, and explains it; each pupil (in the case of large classes every two pupils) has before him a lithographic copy of the same original, showing the drawing as it is to appear when finished. The pupils always draw with charcoal upon paper lightly tinted, and correct the forms, by wiping with tinder or cloth, until they appear correctly; this is succeeded by the execution in crayon or in lead-pencil. The drawings executed in this manner, and exhibited at the World's Fair, frequently showed results that were quite astonishing; and those of the "École de St. Sulpice" (Paris), and "St. Michel" (Havre), must be mentioned more particularly. As shaded, plastic ornament is practiced from flat copies in these schools, the transition from the flat to the round is much easier there than from the outline-ornaments universally introduced with us.

In the numerous Boarding-Schools connected with the elementary educational institutions in France, which, especially in the provincial towns, are frequently in charge of the "Brethren," and in which there are often found pupils fourteen to sixteen years of age, drawing from the round (casts) is practiced with the best success. The models of ornaments are taken almost exclusively from the Renaissance, those for the figure from the antique.

The portfolios exhibited in large masses by the various educa-

tional institutions of the provinces unfortunately gave evidence in but few cases of a systematic course of instruction. Most of the specimens sent were selected show-pieces done by the more talented scholars, some of which, indeed, claimed our admiration, but were little in accordance with the purposes of the Exhibition. This much only became evident from all that was to be seen: that each teacher cultivates his own *genre*, according to his especial liking, and that no uniform principle has as yet been carried through in general. As a rule, instruction in drawing in the institutions named culminates simply in brilliant execution, and, having no positive aims, frequently degenerates into shallow dilettantism. Thus in the "École Communale" of Marseilles almost nothing is drawn but pictures of saints from bad lithographs, and the objectionable large heads in crayon by Julien; at the St. Joseph School at Beauregard, Thionville, the ornament is practiced, but in conjunction with figures and landscapes, which make it apparent that drawing is there treated only as an amusement; in Besançon, again, landscape in charcoal is attempted, and so on. The Boarding-School at Toulouse, on the contrary, exhibited a tolerably systematic course of instruction, from simple geometrical forms up to well-developed ornament. Good drawings from casts were also to be found in the portfolios of the institutions at Moulins, Rouen, and Clermont, where some of the drawing-copies lately published are successfully used. In the more important cities, evening-classes are connected with these institutions, which are frequented by persons engaged in industry, and in which drawing is therefore taught with more especial reference to particular trades. Excellent work is done in these schools in constructive drawing, and, indeed, linear drawing is generally well cultivated even in the lower educational institutions. In freehand drawing, however, very praiseworthy specimens were likewise exhibited. We will here mention only those by the schools of St. Augustin and St. Étienne du Mont (Paris). Superior drawings from casts had been sent by the schools of Rheims and Besançon. With these we approach the field of the special schools, in which, as is well known, drawing receives better care than in any other schools in France; but, before passing on to them, we must glance at the higher People's Schools, the Lycea (the "écoles secondaires" in general),

in which drawing ought to be practiced rather as an element of general than of special education.

This demand, however, has not been satisfied by the study of drawing, as taught in the schools of France up to the present; for even in the Primary Schools special aims are generally kept in view, and drawing is simply cultivated for the practical purposes of industry. As little attention as in other states has, so far, been paid in France to general art-education, i.e., to educating the people to a comprehension of art; and the French Lycea, as Latin Schools, are quite as much strangers to it as are those of Germany and of Austria. The official instructions for drawing at the Lycea (Department of the Seine) do not even intimate that the subject is looked upon in this light; for, besides fixing the hours (one to two per week), they confine themselves to prescribing the regulations to be adhered to in teaching. But these regulations receive very little attention, being of a nature which makes it next to impossible to carry them out. During the first two years, for instance, with one hour weekly, the study of the ornament is to be completed; in the two following (two hours weekly) the human figure and perspective are to be taught; and so on, leaving to the last classes (two hours weekly) "figures in light and shade from casts."

The specimens by pupils in this category only served to show that the teachers treat the subject according to their own individual fancy, and attach but little importance to it. Some of the institutions had again committed the mistake of sending magnificent show-pieces, with the names of the pupils attached (Nîmes for example), which can only be passed by in silence. The same error was made by many of the Communal Schools (and especially of the Department of the Seine) in respect to linear drawing; unless, indeed, these children are prodigies, who, at the age of twelve years, are capable of producing a locomotive in all sections and all projections, or complicated architectures in perspective, with an exactness, and a manual skill, such as was shown in the work which some of the schools did not shrink from offering to the admiration of specialists.

The higher courses of the "Écoles communales (laïques)" of Paris exhibited very creditable specimens; ornament, lightly shaded in crayon, is mostly practiced after the manner already

specified. Drawing in the schools organized after the pattern of the "École Turgot" (Colbert, Lavoisier, Auteuil) rather bears the character of the professional, which, in truth, is the first aim of these schools. Constructive drawing predominates. Of the "Écoles commerciales" (founded by the Chamber of Commerce) the school at No. 23 Avenue Trudaine exhibited drawings by its pupils, mostly decorative pieces, and designs for textile fabrics, which, however, offered nothing new as far as style is concerned.

In the girls' schools for general education, drawing is, indeed, practiced everywhere, but the results are below those of the boys' schools. Flowers and landscapes are taken up before outlines have been sufficiently practiced, which self-evidently must lead to dilettantism. In the "Écoles professionelles" for females, drawing is more successful, and more so in those under the patronage of the Archbishop Mons. Guilbert than in those called into life by Duruy. Of the institutions first named, twenty-one have been organized down to this time in the various *arrondissements* of Paris, according to the necessities of the different localities; and drawing is cultivated especially with a view to female industrial pursuits. The "École professionelle" of the Faubourg Poissonière deserves to be especially mentioned for its pretty needlework and tasteful drawings.

It may be gathered from what has been said so far, that much is still left to be desired in instruction in drawing in the French schools for general education, and that, above all, a common centre is still wanting, proceeding from which well-defined principles might be enforced. No one, however, will doubt that it is very difficult to introduce reforms in a state in which educational matters are still in so many different hands, and are, indeed, in great part left to private enterprise. The efforts made in this direction by the government since 1870 deserve full recognition; and the future of France may be congratulated, if all that is now prescribed by law can be carried out. The French have generally introduced their innovations according to the measure of their wants; and the year 1870, therefore, brought to their educational institutions, what the World's Fairs brought to their industry, i.e., a reform. They demonstrated plainly at the exhibition in the Prater, that they are capable of holding their own against all other states

in the new direction which taste has taken. For this they possess inherited advantages. But it is still a question of the future as to how far the reforms in matters of education can be accomplished.

The luxury of the upper classes in France during and after the epoch of the Baroque style kept French industry in a flourishing condition, and aided its diffusion all over the world. Lucrative occupation called forth numerous industrial schools in which the French artisan gained that technical routine which marks French industry even to-day. Every thing done for art-industrial drawing by the government, by the communes, or by individual manufacturers, was done, as already remarked, not so much for the purpose of purifying taste, as with a view to increasing wealth, and keeping business in a flourishing condition. All the world, indeed, believe l to be beautiful, and admired, whatever came from France. Thus, although it is left to other nations to lead form back to law from caprice, France still has the advantage of a legion of technically well-trained workmen, made over to her by her past, who can be used to good purpose in the reform of her art-industry, while in other countries such workmen will first have to be educated.

The special Industrial Schools arose in obedience to local wants, and, in the provinces, are mostly of a purely local character; in Paris the larger schools are so organized as to serve more general interests. Besides the higher Art-Schools, the city at present has forty Public Drawing-Schools, which are sustained partly by the commune, partly by the government, or by private individuals. All the Municipal Schools, furthermore, have evening classes, in which apprentices and adults are taught free of charge. The greater number of these evening-classes were opened as late as 1864; and the attendance in the year 1869 had risen from twelve hundred to four thousand: after the war it decreased again to two thousand. The attention which the commune of Paris has lately bestowed upon the Industrial Improvement Schools is best shown by the increase in the amount expended upon them, which, from thirty thousand francs shortly after the year 1850, has now reached the sum of three hundred and fifty thousand francs.[1]

The best of the drawing-schools at present to be found in

[1] *What Paris does for Art.* — The following interesting remarks are taken from an article by R. v. Eitelberger on "The Cultivation of Art by the State,"

Paris were mostly established some time ago by capable artists, and at a later date were subventioned by the commune. Of these, the schools of E. Levasseur and Just. Lequien are still the most prominent. At the Exhibition, the works of their pupils were incorporated into the "Exposition de la Ville de Paris," where the

contained in C. v. Lützow's "Art and Art-Industry at the Vienna World's Fair, 1873," Leipsic, 1875, p. 268, &c.

"We have before us the 'Liste des Objets exposés par la Ville de Paris' (Exposition universelle de Vienne, 1873. Paris, 1873. 143 pp.). What were the objects principally exhibited by the city of Paris? They were objects of art.

"Under the heading 'Service des Travaux d'Architecture,' we find the Palace of Justice by J. L. Duc, the Chamber of Commerce by Bailly, the Church of St Ambrosius by Ballu, the Church of St. Augustine by Baltard, the Church of St. Bernard by Magne, the Church of St. Francis Xavier by Lusson, &c., several communal and school buildings, the fountain of the 'Théâtre français,' that of St. Michel and Luxembourg by Davioud, and so on. The most interesting objects are the projects for the restoration of the 'Hôtel de Ville,' especially those by Ballu and Deperthes, which received the first price. It will be seen that the city of Paris employs independent architects in the erection of its buildings.

"This section is followed by the 'Service des Beaux Arts,' consisting of *Peinture* (paintings, designs, water-colors, photographs, painted windows), *Sculpture*, *Gravure* (medals, copperplate engravings), and *Tapisseries*. The catalogue of the 'Service des Beaux Arts' takes up fifty-four pages, and is well worthy of detailed inspection.

"Among the historical painters who have been employed by the city of Paris, there are to be found artists of all tendencies: Barrias, Delacroix, both the Flandrins, Blaize, Hesse, Jobbe Duval, Lehmann, Lenepveu, Robert-Fleury, Signol, Yvon, and others.

"Most of the oil, fresco, and glass paintings were executed for the churches of the city of Paris, the lesser number only having been executed for other public buildings; the same is true of the sculptures. In this department artists of various tendencies are also met with: Carrier-Bellense, Duret, Frémiet, Guillaume, Maillet, &c. The old custom of coining medals in memory of important events has been kept up by the city of Paris.

"Among the copperplate prints there are specimens, executed in line-manner, from paintings which belong to the city of Paris. In short, this exhibition of the city of Paris was a hint to all those who desire to know why art flourishes so vigorously in France. It is not only because the art-schools of France are better organized, and are managed in accordance with higher principles, than elsewhere, but it is also because the arts are provided for in the budget of the commune."

Fortunately for America, we are not encumbered with a state church, so that the religious branch of art is out of the question with us. But would not the bare white walls of the halls of our public schools, of the council chambers of our city councils, or of our legislative halls, offer a splendid field for the exercise of the powers of a coming race of American historical painters?—*Transl.*

admirable model of the Lequien School was likewise to be seen. It showed the grand drawing and modelling hall, which is used in common, with all its arrangements, down to the smallest detail; adjoining this on both sides, the halls for scientific lectures; the hall for the living model (human figure); the collection of models; the office, &c. This school received a premium at the last Paris Exhibition, for its exceedingly practical arrangement; and in Vienna it was likewise highly applauded by specialists.

In Lequien's school, as well as in most of the municipal schools of Paris, all branches of freehand and linear drawing are taught, and its exhibition made an imposing impression by the artistic perfection, as well as by the variety of its work. In the choice of the motives of ornamentation in these higher schools, the traditional, indeed, has not yet been fully done away with.[1] The Rococo still disports itself in tolerably extravagant variations, and has been preserved, especially in Levasseur's school; but, alongside of it, the Renaissance has already appeared upon the field with tolerable decision, and, with the examples of classical architecture, the ornamental motives of the latter are likewise coming into use. Figure-drawing adheres much more closely to the antique. The French, in fact, have never degenerated as much in the figure as in ornament, and their preference for antique forms, especially in sculpture, is characteristic. The execution in drawing, although picturesque throughout, never neglects modulation, and the effort at complete deception is always apparent. The feeling for light and shade is educated to a much higher degree in the French schools than in the German, in which latter the main stress is laid upon the elaboration of the form, and the truly picturesque effect is slighted. The German drawings from casts have a plastic look; but the shadows are mostly untrue in tint, and black to exaggeration. Even in the choice of the tint of their paper, the French show a finer feeling; and it never happens that drawings are made upon paper, the local tint of which does not correspond to the tint of the object.

[1] The designers working for art-industrial purposes are in the same state of vacillation. Their works were exhibited in the transept of the French division. V. Dumont, Prignot, J. Dubuisson, are all of them still flirting with the style of the time of Louis XV. Edan already employs purer and more compact forms. J. Gonelle and Charles François remain unsurpassed in their designs for shawls.

The academical studies evince precise, individual conception, coupled with a good understanding of the anatomy. The practice of *sketching* from the living model, carried on in the school of Lequien (*fils*), is very praiseworthy. The position of the model is changed at the end of two hours, and the scholars are held to study and represent nature as fully as possible during the time allowed; certainly a much more practical way of studying it than by means of the minute finish given to the objects according to the method still so often the fashion in German art-schools.

It must not remain unnoticed here, that the new drawing-copies, spoken of above, are in general use in the municipal drawing-schools, with the best of success, and that Julien has been driven from the field.

In architectural drawing there were exhibited, of classical subjects, Greek columns and temples, but surprisingly little of Italian Renaissance. Most of the drawings of façades are taken from the epoch of French pomp, or adhere to the insipid productions of modern times. Constructive drawing proper, on the contrary, flourishes in all its branches, and especially in the department of machinery.

Specimens of modelling were exhibited only by the schools of Lequien and Levasseur, — reliefs, with figures from nature and from the antique, showing throughout a picturesque treatment; also Renaissance ornaments, busts, &c. Many of the original compositions still showed the Baroque style. Levasseur's school also submitted plants modelled from nature, in plaster and in wax.

Good drawings were also to be seen from the "École de Dessin du Rue St. Bernard, 20," the "École du Rue d'Algire," and the "École d'Avenue d' Italie." Among the female municipal drawing-schools, the one under the direction of Madame Levasseur made a brilliant exhibition, especially of flower-studies, and also of very good figures and ornaments. The schools of the fifth and sixteenth *arrondisements* ranked next.

The "École de Dessin" of the "Manufacture Nationael des Gobelins" exhibited very interesting drawings and studies for gobelins. This school is managed most excellently by Professors Lucas and Maillard; and the figure, together with the study of flowers, is especially cultivated in it.

Of the "École Speciale d'Architecture" (established 1863) there were to be seen original works, and photographs from such. The school is well known by its admirable productions. A large number of architectural works were published by it, of which the "Fragments d'Architecture" (Paris, Morel) must be mentioned as the most prominent.

Excellent specimens had furthermore been sent by the provincial cities from the renowned "Écoles professionelles" of Rouen, St. Quentin, Havre, Lyons (la martinere), and the "École Industrielle de la Ville de Lille." There were also numerous portfolios, with good drawings from Normandy and the Bretagne, where the greater number of the "Écoles manufacturelles" are to be found. In the South, Toulouse and Bordeaux still continue to be the central points of art-instruction, and their schools are the patterns for those of the smaller cities. The schools of Bordeaux are more inclined towards the industrial; while in Toulouse, under the direction of M. Gaillard, the academical and purely artistic prevails.

Opportunity is everywhere given to the workingman in France, and perhaps more especially so in Paris, to acquire an artistic education; and the government has at no time neglected to see to it, that the advantages offered should be made use of to their full extent. Hausmann, under Napoleon, had, indeed, done a good deal in this direction; but a good deal remained still to be done, when the calamitous catastrophe of war produced a marked change in the course of all things in France. The present ministry, however, took up the question more energetically than before, and its efforts are especially directed towards advancing the education of the working-classes. People are well convinced that it is chiefly industry which must bring the lost milliards back to the country; while at the same time, in view of the advances made by other nations, to stand still would be equal to retrogression. But however the special schools of Paris may flourish, and however large a number of artistically-trained working-men they may supply to the industries, it is nevertheless true, that with the mass of the laboring classes, and especially with the apprentices, — the young aftergrowth as it were, — general as well as special education is still exceedingly deficient. In view of these circumstances, M. Gréard, at present Inspector-General

of Public Instruction, last year addressed a detailed report on the "Écoles d'Apprentis" to the Prefect of the Seine, in which he made certain propositions calculated to remedy the existing defects. This very interesting document shows that its author has studied the question most thoroughly in its relation to France, and that, by a fearless exposure of existing evils, he hopes to open the way to better results. Not without justice does the author remark, in describing the slave-like uses made of the apprentices on the part of the masters, "The tree is cut down to gather the fruit," and "The fruit is destroyed in the flower." The sad truth of these words has indeed been experienced elsewhere than in France, especially in Vienna; and efforts are now making everywhere to check this evil. Severe measures, however, cannot be carried through by the government, as these would conflict with the liberty of trade. The enactments that are made can therefore aim only at the welfare of the future, without bringing immediate gain to the present.

After giving a detailed description of the existing schools for persons engaged in industrial pursuits, such as the "Pensionats" and "Externats d'apprentis," the "Écoles professionelles," "Écoles industrielles," &c., as regards their organization as well as their results, the author of the document in question passes on to a full review of the question of prizes and competitions, their advantages or disadvantages to instruction.

In the year 1847, the municipal administration established premiums for the pupils, with the intention of increasing the interest in the schools. It soon became evident, however, that it was difficult, in view of the unequal preparation of the pupils, to reward talent as well as industry; and therefore, instead of the prizes, scholarships were created (1854). But, unfortunately, the speculation of the masters again induced them to enact a most injudicious part; and thus the advantages to the community remained problematic. Numerous evening classes were then opened (1864), so as to provide increased facilities for the advancement of the education of artisans; and by these evening classes the number of public drawing-schools was carried up to thirty-three.[1] Competitions with prizes were established, which

[1] In 1851 there were only six.

occurred every two years on the occasion of the exhibitions of the "Union de Beaux Arts;" besides which the commune put a number of medals, proportioned to the number of scholars, at the disposal of the directors of the drawing-schools, which were distributed by the teachers among the most industrious pupils. For the purpose of animating the adults (assistants, journeymen, &c.), and of keeping up their interest in their own education, yearly competitions, with prizes, were likewise established for them.[1]

The special schools existing in France are also reviewed very thoroughly by M. Gréard. He endeavors, by examples, to give an insight into the condition of general and special instruction in the various institutions; and, taking as a basis the systems upon which the schools now existing at Creuzot, Nantes, Havre, and Paris are organized, he sketches the programme for a model school, which appears to be in harmony with the demands of the times and the necessities of Paris. In conclusion, the author recommends that the government establish such a school in Paris immediately, this school to serve as a model for all those to be organized in future; that the people be requested by the government to cause the apprentices to frequent the schools provided for them; that the government subvention the industrial schools supported by associations, and that it employ all possible means for the development of whatever else of drawing-schools there may be in existence. The leading authorities have carried out these wishes to the fullest extent, and, by a series of enactments, have given evidence that, even in the midst of the worst political struggles, they have not lost sight of art-industrial education, but that, on the contrary, they seek to restore the prosperity of the country by its means.

As a "Règlement Général sur l'Enseignement du Dessin dans

[1] The regulations still in force are as follows: Of each twenty-five scholars, three, who have been selected by their professor according to their progress, are permitted to take part in the competition. The pupils of the different schools meet at a place designated by the administration, and are required to execute two drawings under surveillance: first, a copy of an ornament from the flat; and secondly, a copy of an ornament from a cast. Three prizes and six honorable mentions are given yearly. Each medal is accompanied by a diploma signed by the prefect.

les Écoles Primaires et dans les Classes d'Apprentis ou d'Adultes de la Ville de Paris," the enactments of the year 1865 (by Duruy and C. E. Haussmann) are still in force.

The examination which the drawing-teachers of the "Écoles Municipales" must undergo before the commission especially appointed for the purpose embraces the following subjects: For free-hand drawing: 1, The execution of a drawing from a plaster ornament; 2, A drawing from an antique statue; 3, A thoroughly finished drawing of the human figure from nature; 4, An original composition of an ornament with figures (the candidate may draw or model, according to his preference); 5, Correction of an ornament and of a figure drawn by a pupil; the correction to be made before the commission by the candidate, who is held at the same time to accompany the correction by explanations given in a loud voice (*en expliquant à haute voix*).

For linear drawing the candidate must execute: 1, An architectural theme according to a given programme, and, 2, A problem of descriptive geometry; furthermore, 3, He must pass through a verbal examination on the elements of mathematics, geometry, descriptive geometry, perspective, architecture, and mechanics.

As superintendents of drawing, two inspectors were nominated (for the department of the Seine), according to the organization of the year 1865 (Article II.), whose duty it is to report to a commission on the activity of the teachers, and to see to the conservation of the schools. The commission just mentioned consists of fifteen members, five of whom are renewed every year. It examines the candidates, proposes the models (originals) for drawing-instruction, and decides on regulations, methods, programmes, &c., for drawing in the different schools. The duties of the inspectors were more clearly defined in the year 1870, in four articles by the prefect. M. Henri Chevreau; and a circular by the present "Directeur de l'Enseignment" Gréard still further emphasizes that each school in the department must be inspected at least twice a year, and that a detailed report must be made to the prefect.

The attention which is devoted to drawing in France, and the readiness with which sacrifices are made for it, have no doubt been

inspired by industry, and industry has repaid the outlay with bountiful interest. It needed only a stroll through the art-hall, however, to make it apparent that art itself, which has always been at the service of the manufactures to a much greater extent in France than in Germany, is likewise recognized by the government as an important factor of industry. Nearly two-thirds of the 1024 French paintings and sculptures were marked in the catalogue: "Belonging to the state" ("Appartient à l'État"). The millions expended upon them are abundantly returned to the coffers of the state through other channels;[1] and this policy of France in respect to art can only be recommended to other states. Let the laurel decorate not only the sword, but also the lyre of a nation, and let us remember the lesson, already demonstrated to us by antiquity, that art, if it is to flourish, must be fostered by the government. But, at the same time, let no nation neglect to educate its people to the comprehension of art — a problem which in France, quite as much as with ourselves, is still awaiting its solution.

[1] The statistics of commerce showed thirteen hundred millions of francs in 1851, and four thousand millions in 1869, of which nearly one-half is made up by articles of luxury.

ITALY.

There are few branches of art-industry whose origin and first development must not be sought upon Italian soil. The revolution which took place in art in this country during the Cinque-Cento acted also upon the art-industries. While in art the human figure suddenly awoke to life, in art-industry the ornament freed itself from its rigid architectural framework, shot forth in an abundance of animated forms, and developed such a wealth and variety of motives, that, even after the pause which was brought about by the Baroque period, it was still capable of becoming the never-failing source of modern industry. The Italian Industrial Exhibition plainly showed how the development of form in art-industry can be influenced by good examples.

The Italy of to-day may, indeed, be likened to a museum containing the monuments of all those branches of art whose triumphs were achieved upon its soil a few hundred years ago. With these splendors continually before its eyes, it is impossible for Italian industry to leave its noble old traditions. It continues to build in the same direction, uses the motives already in existence, and transplants them, as the gardener transplants his flowers, into the most varied compositions for the decoration of its objects, and in this manner is finally led to original invention in the spirit of the ancients themselves.

But, together with the forms of the Renaissance, its various technical processes have also been inherited; and Italy is therefore still unsurpassed in certain departments of art even to-day. The spirit of the Renaissance has been handed down undimmed in the ornament as applied in the industries; but in the figure, that form which of all forms is the most truly artistic, it has descended from sublime solemnity to the naïve and the profane. It made a

painful impression upon the lover of art to see so much brilliant technical execution, in the Italian sculptures, wasted upon so much that was unmeaning. It would lead us too far, were we to enter upon the principal branches of Italian art-industry as regards forms and technical management. The skill of the Italians in glass and in marble, in faiences, bronzes, and above all in wood-carvings, is an inheritance of the classical period of the fifteenth and sixteenth centuries. The traditional education in the matter of form, by means of the schools, is closely connected with these various branches of industry. It is remarkable, for instance, that in the ornamentation of textile fabrics, which has for some time been ignored in the schools, the traditions of the Renaissance have died out almost entirely, and foreign (French) elements have found entrance to a greater extent than in other departments, — a proof of the connection which exists between art-instruction and the modification of form in industry. It was commerce, undoubtedly, which prescribed the models for the schools in Italy; and the artists trained in the spirit of the Renaissance made the forms of the Renaissance traditional; but, when the artists followed the fashion in regard to French flowers in the designs for textile fabrics, the schools took no notice of the fact. Now, if the designers in this branch had also been trained in the classical forms by the schools, these forms would certainly have maintained the field.

In the industrial districts of Italy drawing is indeed more than a desideratum, and therefore finds the most careful cultivation. The "scuola tecnica" very generally has also the character of a technical school in which technical aims take the precedence of the elements of general education. The drawings gave evidence everywhere of the practical purposes of the decorator, even in linear drawing, in which the geometrical ornament (mosaic floors, &c.,) always played an important part. The Exhibition had been abundantly supplied with drawings by the pupils. All the provinces of the country, far-off Sicily not excepted, were represented by portfolios; and, in view of the mass of interesting material, it was only to be regretted that no systematic arrangement had been made, either geographically, or according to the categories of the schools, and that the government had neglected to delegate a

specialist to the Exhibition who might have supplied further information. The representation of the course of instruction had only been partially kept in view; generally speaking, mere exhibition pieces had been sent, i.e., the best productions of the scholars. We shall begin with the North of Italy, that part which was most extensively represented in the Exhibition.

The "Istituto Industriale e Professionale" of Turin exhibited specimens by its pupils, which embraced all the departments of drawing. The drawings of the technological sections were especially prominent, and the course of instruction in the preparatory class could be clearly traced in them. In the special courses very good specimens in machine-drawing were to be seen, while architectural and topographical drawing was also represented by excellent work. In freehand drawing the ornament (in lead) was especially brilliant. Drawing in this institution is intrusted to the excellent management of Prof. G. A. Boidi, the author of many works in this specialty, which were on exhibition, and must here be mentioned. His "Manuale di Disegno Lineare Geometrico" embraces the knowledge of form applied to geometrical ornaments, projection applied to buildings, and the most important parts of perspective. The same author's "L'Ingegnere," in which descriptive geometry is thoroughly treated, the examples being mostly selected from machinery, may be looked upon as a continuation of the first work for the higher classes. For architecture the "Corso Compiuto di Disegno Geometrico Industriale" offers an excellent school in construction, while the "Manuale di Disegno Architectonico" contains beautiful motives for architectural decoration.

Boidi's "Corso Elementare d'Ornato" has been designed for the first stages of instruction in freehand drawing, in accordance with the legal requirements of the plan of instruction. It progresses gradually from simple leaf-forms to more developed ornament, and is succeeded by the "Corso Progressive d'Ornato Ombreggiato a Due Dinti," which serves as a preparation for drawing from nature, and embraces Renaissance forms as well as Gothic forms. It is somewhat hindering in these copies, that the tint fills in only the outlines of the figures, while the background is left white; otherwise the execution, and the treatment of form,

are very neat. For female industry the author has published a "Corso di Disegno a Mano Libera," flowers executed in sepia and in colors; but this is not as successful as the other works. The motives in the "Corso di Disegno Applicato ai Lavori Donnesche" are entirely in French taste. Boidi has extended his activity also to topographical drawing, as was shown by his "Corso Metodico Teorico-Pratico di Disegno Topografico," in which the elements of this branch of drawing are arranged in good order.

The "Scuola di Ornamentacione del R. Museo Industriale" of Turin was represented by very beautiful modellings, which were especially brilliant in their virtuosity of execution and their mastery of form. Prof. Pietro Giusti, the director of the school, exhibited a frame artistically carved in wood, in which an abundance of charming motives in the style of the early Renaissance had been united into a whole. Two volumes of drawings of designs for decorative wood-carvings, by Giusti, were also submitted. They adhered throughout to the spirit of the Renaissance, and, by introducing the forms of figures and animals, offered many new and original motives.

In the "Scuola Governativa di Po," of Turin, older French examples are mostly used, and the results were of less importance.

Very good specimens were exhibited by the "Scuola Civica Femminile di Disegno Industriale," at Genoa; they also gave an insight into the method in use in the institution, which in many respects is identical with that employed in France. The pupils begin by sketching simple forms on a large scale with charcoal on gray paper, and then draw the outlines with brush and India ink; in the further prosecution of the exercises the surfaces are laid in with the brush and the forms are drawn with the pen. This is followed up by drawing from wire-models, from geometrical solids, and from casts of ornaments. In the higher courses, drawing from nature is extended to other objects, such as flowers, fruit, &c., ornaments for flat surfaces in color being practiced at the same time. Finally, after the requisite preparatory studies have been made, the pupils are exercised in original composition. The designs of this kind which were on exhibition deserved unqualified praise for their technical execution, as well as for their tasteful style. In some cases, natural flowers played so delicately and

gracefully about the forms of the Renaissance, that these two decorative elements united with each other quite harmoniously, although they are in themselves incongruous.

In the "Scuola Professionale per le Artigani" French taste prevails almost exclusively. This school also gave a comprehensive survey of its course of instruction. The drawings of the "Scuola Tecnica Occidentale," of Genoa, did not offer any thing especially interesting.

The "Istituto Tecnico" of Alessandria submitted very attractive specimens by its pupils. Freehand as well as linear drawing showed a very correct course of instruction; and machine and architectural drawing was particularly well represented. The topographical drawings were also very praiseworthy; in figure-drawing, however, deficiencies were noticeable, which made themselves felt also in ornament wherever figures had been introduced. The institution at Guneo, of a similar character, had sent beautifully executed outline ornaments and architectural drawings, and pretty drawings of furniture, &c. From Milan only the "Scuola Superiore di Agricoltura" had sent some drawings by its pupils. Among them there were to be found landscapes (Calame) in pencil on tinted paper, heightened with white, of especially neat and clever execution; also flowers from French examples, which, however, did not come up to the originals. Drawings from casts of ornaments, exceedingly minute in execution, were sent by the "Reale Scuola Tecnica" of Pavia. The drawings were executed partly in pencil or crayon, partly in India ink, and the relief had been imitated to the point of photographic illusion; the same almost excessive execution was noticeable in linear drawing, where, especially in the perspective studies of stereometric bodies, the *ne plus ultra* of finical execution with the brush had been reached. On the other hand, the really constructive, the geometrical element in itself, appeared to have been neglected, geometrical ornaments and architectural decorations being prevalent. The "Scuola Tecnica" of Lodi exhibited good ornaments and India-ink drawings from geometrical bodies; in linear drawing: constructions, the orders of columns, and mosaic floors. The work of the "Scuola Serale di Carità" at Lodi was less attractive. At the "Scuola Popolare della Società d'Industriale e Belle

Arti," in Vigevano-Lomellina, drawing is practiced without the least system. A good commencement is made in ornament after the French manner; but otherwise landscapes, flowers, &c., are copied purely after the amateur fashion, while drawing from the cast is very deficient. The specimens sent by the "Scuola Communale Maschile-Feminile" of Codogno, although consisting only of show-pieces, must also be condemned. With the exception of some well-drawn heads, all these specimens exhibited a want of training, of comprehension of form, and of execution.

Very excellent specimens in linear drawing were shown by the "Istituto Tecnico" of Mantua in machine drawing and architecture, as well as in topographical drawing. The "Reale Istituto Industriale" at Piacenza exhibited a collection of casts from nature and from ornaments, which can be recommended for instruction in drawing.

The "Patrio Istituto Manin" of Venice was also represented at Vienna by superior specimens, the same as at Paris at the time of the last Exhibition. In the first course instruction progresses from simple geometrical forms to more complicated ornaments in the usual manner; and in the second course drawing from plastic models is taken up. These drawings (in India ink and in pencil) were most exact and artistic in their execution. The main stress, however, is laid upon drawing with reference to the various specialties, all branches of which were represented by eminently successful specimens. Linear drawing appears to receive less care. Quite a peculiar method is employed for the first stages of instruction in the "Reale Scuola Tecnica" at Venice. Constructive perspective is here practiced; but freehand work is sometimes introduced into the same drawing (glaring mistakes, however, were noticeable here and there); this is followed up by the study of objects from nature (minutely executed), and constructive drawing of a very defective quality. The greatest part of the labor in most of these drawings had, however, been expended upon the borders surrounding them. These borders were frequently quite artistic in execution, the most complicated Greek and Renaissance ornaments having been employed; and they must have taken three or four times the time devoted to the drawings themselves. The projections were good, and tolerably well finished; there were

likewise ornaments from casts, executed in the well-known brilliant manner, sometimes grouped together with other objects in small groups of "still life," frequently quite picturesque, but always treated as show-pieces. Such work will ever remain a waste of time.

The "Scuola Tecnica e Serale" at Ravenna exhibited large drawings of Renaissance ornaments, partly in good outlines, partly in India ink; and larger groups of models and vessels in color, as well as pretty architectural pieces. The specimens by the "Scuola Tecnica" at Treviso stood upon the same level; projection-drawing in this school is also good, and, as an exception, figure-drawing likewise.

At the "Istituto Tecnico" of Udine constructive drawing and descriptive geometry are practiced pretty thoroughly, and are succeeded by geometrical ornament (mosaic floors) and the orders of columns; in frechand-drawing, surface ornament in color is cultivated more especially. Prettily-drawn ornaments in pencil and in India ink, from the "Reale Scuola Tecnica e Scuola Festiva," must also be mentioned; but the arrangement of the specimens was tolerably unsystematical.

Turning now to the South, we must notice first of all the splendid achievements of the "Scuola Tecnica Pareggiata" of Ferrara.

The drawings of this school, almost exclusively Renaissance ornaments, were executed with admirable delicacy partly in pen-oil, partly in India ink, and color. Among them those pictures of groups of objects were again especially brilliant, which find such general favor in Italy. In linear drawing there were good studies in projection, columns, arches, &c. The achievements in free-hand-drawing of the "Scuola Tecnica Diurna" of Bologne were equally good, a stronger emphasis, however, having been laid upon colored decoration; the institution also submitted good architectural drawings. But the specimens of the "Scuola Tecnica Serale" of the same city were among the most prominent of the whole Exhibition. Among them there were to be found large decorative Renaissance ornaments (in various styles of execution), representations of "still life" of amazing virtuosity, flowers, fruit, &c., drawings from jewelry of the best period, charming vessels, furniture; in short, studies for all branches of art-industry.

The technical communal school "Dante" at Florence gave a very comprehensive survey of its course of instruction, and of the method employed in drawing, by an exhibition of the work of its pupils. The school proposes to give a suitable general education to all young persons who desire to devote themselves to some definite calling, either in the service of the state, in industry, or in agriculture. The special education of its pupils is afterwards completed at the technical high schools.

The school is divided into four classes; and in the first class five hours, in each of the others nine hours, are devoted to drawing. The freehand-drawings, progressing systematically from simple outlines to ornaments in plaster, were among the best exhibited by the intermediate schools of Italy. The simplest means of execution are made use of, frequently the lead-pencil only; but the handling is of a tenderness and a delicacy which must be called admirable, in view of the age of the pupils (thirteen to seventeen years). Besides the plastic drawings, there were also flat ornaments (early Renaissance) of exemplary treatment. Linear drawing is practiced much the same as in our Real-Schools, with immediate application to architecture and machinery. Very excellent specimens, especially as far as descriptive geometry and machine drawing are concerned, were also exhibited by the "Scuola Tecnica Municipale Leon Battista Alberti;" the freehand drawings displayed throughout a delicate, artistic, but nevertheless precise treatment.

The "Scuola Tecnica" at Perugia, besides good ornaments, exhibited also remarkably beautiful drawings of Renaissance vessels, inlaid furniture, &c. The "Scuola Maschile" of the same city confines itself almost entirely to the construction of mosaic floors. The "Scuola Tecnica" at Orvieto was represented by splendid freehand drawings; its course of instruction was well displayed. The ornaments from casts in India ink (which the Italians prefer to use for this purpose), were again of the utmost delicacy of execution; geometrical drawing was not as strong; the projections, on the contrary, were good. The "Scuola Tecnica" of Lodi made a brilliant exhibition of drawings of every description; the drawings from casts were again mostly in India ink, while architectural pieces, decorations, &c., were charmingly

hatched with the pen. Marvels of execution were also to be seen in the construction of shadows; the beholder admires the patience, the technical skill, and is pleased with the beauty of the work; but the voice of reason must nevertheless pronounce all such work to be waste of time. The achievements of this school in linear drawing are equalled in freehand drawing by the "Scuola Tecnica di Disegno in Sant Arcangelo di Romagna." This school exhibited large drawings of Florentine and Roman Renaissance monuments, which were represented in such perfection, that it seemed a pity not to have executed them upon stone; they would have made a most splendid work.

The technical schools of Arcolipiceno and Pistoja must likewise be mentioned for their good results; the institution at the last-named place gave a good presentation of its plan of instruction by means of the work of its pupils.

Farther South the schools of Naples occupied the most prominent rank. The "Scuola di Disegno Applicato alle Arti" of the "Società Centrale Operaria Nationale" exhibited very successful specimens. All the branches of drawing are practiced at this institution, and the practical purpose, the application, is continually kept in view; figure-drawing, which is neglected almost everywhere in Italy, if we except a few schools in the North, was also represented by very pretty drawings in some of its branches. It is superfluous, probably, to say that "Julien" is used exclusively. Besides the institution just named, the well-known "Reali Istituti Tecnico e di Marina Mercantile" had also submitted specimens of their drawings, which again confirmed the reputation of these schools in architecture, as well as in machine and ship building. Of freehand drawings we must mention the ornaments in crayon, of beautiful execution. The institution also exhibited the plans and views of its building. In this connection it will be proper to notice also the excellent results in technical drawing for maritime purposes of the "R. Istituto di Marina Mercantile di Piano," at Sorrento.

Having finally mentioned the satisfactory results of the "Scuola Tecnica Provinca" at Salerno, we have touched upon all that was of special importance among the work of the pupils sent to Vienna from the Italian peninsula.

From the island of Sicily the "Società Operaria," of Messina, had sent some drawings, which, however, left much to be desired in choice of models, as well as in execution. They were principally figure-studies, among which those after Julien must be called the best, in spite of their deficiencies. Academical studies had been copied (probably from drawings) without the least understanding; and the shaded ornaments were wanting in that delicacy of execution which otherwise is the peculiar characteristic of the Italians. The "Scuola Tecnica" at Nola, on the contrary, exhibited very pretty results; linear and freehand drawing is there practiced according to the usual method, and the success attained deserves full praise.

From the island of Sardinia the "Scuola Tecnica" at Cagliari had sent specimens of the work of its pupils, among which, however, only the linear drawings deserved to be called good; free-hand-drawing in ornament and in figures (from French originals) is practiced without system and without results.

It will be seen from the remarks made in the preceding paragraphs, that exertions are not lacking in Italy to keep alive the traditions of its rich art-industry, and to train new agents for its service. The fact, that the forms employed do not go beyond this tradition, and that very little progress has consequently been made for years, is mainly owing to the schools, which content themselves with imitating old examples, and neglect to introduce new elements from the universal fountain-head of all art, — from nature. Even the absence of figure-drawing is sufficient to act as a check upon the free development of the ornament; and this subject will have to receive attention above every thing else, if the people are to be educated to a higher comprehension of art. The Italian industries of to-day, unlike those of the Cinque-Cento, have no great art at their side, from which they might receive a further impulse. They plod along the old roads in solitude, and are content with preserving the intellectual elements bequeathed to them by former times.

To be sure, the time during which reformatory movements in art-industry have been made consciously has been but short as yet, and the monumental world of Italy is far from being exhausted. But it seems as if a freer intellectual movement in the

spirit of progress ought to take place earlier than anywhere else in that country in which the noblest forms have their home.

Looking over the publications issued throughout the world for purposes of art-instruction during the last twenty years, we shall find that certainly two-thirds of their contents are taken from the monuments of Italy. England, France, Germany, and Austria have drawn upon the treasures of this country for the education of their own art, and have employed them as means for the improvement of taste.

So far the political condition of Italy has undoubtedly been the principal cause why the materials to be found in the country have not been turned to advantage more independently. Now that the unity has been attained which was so long striven for, a more satisfactory activity may also be expected in the direction of art. The later publications for instruction in drawing and in art consist mainly of photographs, which, as is well known, have been brought to the highest state of perfection in Italy, especially for the reproduction of paintings, &c. Besides large copies of the paintings of the classical masters, we must not forget to mention the highly interesting and superior publication of the drawings in the Pinakotheka of Venice, by A. Srini. The old city of the Tiber, with its surroundings, appeared bodily at the exhibition in the splendid pictures (by Fratelli Rosa) published under the title, "Sulle Scoperte Archeologiche nelle Città e Provincia di Roma negli Anni 1871–1872."

Of lithographic works we may finally mention "Racolta di Ornamenti," from terra-cottas at Siena (fifteenth and sixteenth centuries) by S. Rotellini and G. Breuci (Siena, 1873), consisting of charming Renaissance motives composed for the most varied spaces; and "Musaici Christiani e Saggi Pavimenti della Chiese di Roma" (fifteenth century), by G. B. di Rossi, beautifully executed in chromolithography.

ENGLAND.

Prominent mention has before been made of the fact that England, after the first London World's Fair of 1851, preceded all the other states of Europe in endeavoring to reform the taste then prevalent in art-industry, and thereby to elevate the standard of her own industrial products. As a central point for this undertaking, the South Kensington Museum, with the Art-School attached to it, was established, and a special administrative Science and Art Department was created. "Schools of Art" were also established in all the more important industrial cities of the country (above one hundred so far), in which instruction is given in drawing, painting, and modelling, according to the necessities of the several localities. All the examples used by these schools issue from their centre, — the rich collection of the institution just named, which also exercises its influence upon art-instruction in various other ways. Besides the art-schools, there are also numerous evening classes for those engaged in industrial pursuits, all of which have the same object.[1]

Two decades have passed by since this movement commenced in England; and the revolution in English industry, in relation to refinement of style, has been followed with great interest at all the World's Fairs. England's participation at the Vienna Exhibition was likewise looked forward to with great expectations; and it was hoped that an interesting picture, especially in regard to art-industrial instruction, would here be shown. But these hopes were

[1] The organization of the museums and of art-instruction in England has been treated in detail in the Austrian reports on the World's Fairs of 1862 and 1867. A more comprehensive review of the situation is given by Dr. Hermann Schwabe: "Die Förderung der Kunstindustrie in England, &c." Berlin, 1866.

disappointed. England concentrated her attention upon the representation of her colonies; she unfolded her Asiatic riches, while her native industry was represented very incompletely, and her educational system very inefficiently. Nothing was to be seen but some specimens by the pupils of the Kensington School, and a few of the publications of this institution. It certainly seemed strange that the country from which the idea of World's Fairs had first emanated should so ignore the important chapter of art-education, to which it owes its present position in industry as compared to other states.

Everybody perceives that the influence of the English art-schools in the matter of form within the last twenty years has been of the greatest importance. Still the aims originally proposed are far from having been reached; and it will not yet do for the schools to rest upon their laurels, although the success of art-instruction may already be traced in English art-industry. Taste has refined itself decidedly, and the forms of industrial products in general are more artistic, and of a better style. But they are still far from moving in a uniform track; on the contrary, they diverge into all styles and all directions. It would appear that an independent position has been taken by English art in the ornamentation of flat surfaces only. In this department, there is observable a unity of forms of a decidedly modern style. The same may also be said of furniture, into which polychrome surface-ornamentation has been introduced. But in silverware, bronzes, faiences, and majolicas, the whole history of art is illustrated, from ancient India down to the epoch of the Baroque style. No doubt the historical *technique* in these latter branches of industry very generally demands also the historical style, since, as a rule, more attention is paid to the demands of *connaisseurs* than to an artistic taste. In the future the principal task of the scientific direction of art-instruction in England will probably be to check this dispersion among all the various styles, and to lead from imitation to original creation. It is, however, still a question of time, whether England will ever be able to attain to the position of recognized leadership in art and art-industry, as far as the *technique* is concerned.[1] In this the

[1] The above sentence has been left as it stands in the original, although the word "technique" appears to have crept in by a mistake. The context makes it evident that the "artistic spirit" is alluded to.—*Transl.*

French and the Germans of to-day are far in the advance; and it need not astonish us when we find that the most beautiful productions of the firm "Minton," for example, owe their origin to French and to German artists. The English nation is indeed an art-loving, but on the whole not an artistic nation, as any unprejudiced observer might again have noticed in the Art-Hall. And it will always remain problematic whether art-industry can of itself attain to the highest degree of development in a country in which art proper does not occupy a leading position.

In spite of all successes, the matter of form in England is still in a state of fermentation; and it will only be possible at some later period, when the process of clarification shall have been completed, to arrive at a judgment of the value of the art-educational apparatus, which has been put in motion with such good intentions.

If we now take a look at the exhibition of the Kensington School, we shall find neat productions of good style in all branches of art-industry, revealing throughout the effort to attain to a uniform principle in harmony with the spirit of the reform. The results could not be called brilliant; on the whole, they left one cool. The authorities of the Museum had arranged a table of the class-divisions of the institution, and had endeavored as much as possible to exhibit something of each branch. But this had a tendency to cut up the picture of the activity of the school, as two or three specimens of a special division were not sufficient to give an idea of its character. The authorities had also neglected to provide the programmes of the institution since 1867, which might have helped to supplement the fragmentary nature of the Exhibition. The course of instruction in the preparatory classes could be traced only with difficulty. Of the work of these classes there were to be seen ornaments from casts in outline; others shaded in sepia, and geometrical models executed in crayon. By the higher (special) classes there were exhibited copies of original models in various styles, studies from nature, and original compositions; the best among these were sketches for the ornamentation of flat surfaces, paper-hangings, textile fabrics, &c. The flower is carefully studied, and is applied to ornament in a very excellent manner; only here and there, especially in the designs for fans, did its application recall French taste.

The composition of the ornament is always made with reference to the finished object, and its purpose is invariably kept in view.

Figure-drawing played a more subordinate part among the specimens exhibited. Although some of the antique statues left nothing to be desired in careful execution, the anatomical studies (from the Discobolus) were sufficient to expose its weakness.

Of studies from nature (academical drawings), only a few were shown.

Of sculptures there were to be found only some ornaments, and reliefs with figures, of no special importance. The best of them was a relief of the (anatomical) Discobolus, in which the forms were correctly and truthfully given.

Of linear drawings there were submitted studies in projection and perspective, a few machine-drawings, and pretty architectural drawings, among which interior decorations of good style deserve prominent mention. A restoration of the Lysikrates monument at Athens, following Hansen's plan with but unimportant deviations, merits a notice for its neat, painstaking execution.

But the most important specimens exhibited by the institution consisted of the etchings executed by the scholars from objects in the museum, for the purpose of dissemination. This exceedingly rich collection embraced plates of great beauty. The chromolithographs from originals in the museum, published by the institution, are also worthy of all praise. The decorative drawings, "The Twelve Months" and "The Four Seasons," composed by E. F. Poynter, A.R.A., an artist of great talent, for the Kensington Museum (as "decorative designs for the Grill Room"), must likewise be mentioned.

It has before been observed that the foreign possessions of England were represented on a very comprehensive scale. Among them India, with its industry and its treasures of art, stood in the first rank. The exposition of the School of Art at Bombay, consisting of models and drawings by the pupils, as well as of photographs from such, was very interesting. The tendency of this school, in regard to style, is quite peculiar. Flowers are used as subjects of study in modelling and in drawing, while old Hindoo forms and the forms of the European Renaissance are employed in ornamentation. The compositions resulting from

these three different elements exhibited but little unity, and were generally overladen. The best among them were perhaps those in which the old native forms had been imitated. The attempts at artistic figure-painting did not rise perceptibly above the ordinary productions of amateurs.[1]

[1] *The English Art-Educational Institutions* are very highly spoken of in the Reports on the Exposition of 1867, which Prof. Langl alludes to on p. 119.

Dr. A. Kornhuber, Professor at the Polytechnic Institute at Vienna, and member of the International Jury at Paris, 1867 (Class 90), says, in his "Report on Intermediate and Industrial Instruction" (Austrian Report on the Exposition, vol. vi. part xi. pp. 272, 273):—

"It is only since 1833 that the English Government has taken any part in education by extending its support to the People's Schools; and in 1853 it created a special administrative 'Science and Art Department.' Branch-schools all over the country are connected with this department, among them ninety-two 'Schools of Art,' which in 1865 were attended by 16,621 pupils, and in which instruction is given in drawing, painting, modelling, and in composing original designs for manufacturing and decorative purposes, the instruction being intended more especially for the benefit of the industrial classes. The Schools of Art also extend their instruction to the Elementary Schools, and 89,267 children partook of it in the year named. Night-classes have also been opened for those who are engaged in industrial pursuits during the day; and besides all this the excellent collection of the South Kensington Museum (administered by the Science and Art Department) serves as a central dépôt of examples and copies which are put to practical use all over the country, as far as possible. . . .

"The 'Schools of Art' have proved to be very useful, and have been exceedingly beneficial in their influence upon the working population of England; for the instruction given in these schools does not only make the artisans more skilful, but it also animates and enables them to improve old objects, and to discover new processes, and thus elevates their social position, while increasing the producing power of the country. The usefulness of these schools is seen above all in the manufacture of machinery, the notable progress in which is mainly owing to them. The Art School at Birmingham gave an extraordinary impetus to the production of decorative furniture, of *papier-maché*, and to the manufacture of jewelry; the school at Dundee (with 1,922 pupils in 1865) influenced the jute-manufactories; the school at Paisley (existing since 1848, and attended by 1,063 pupils in 1865) is of great use to the manufacture of shawls; the one at Nottingham (established 1843) has raised the manufacture of lace by the introduction of better taste in the designs; the woollen manufactures are measurably benefited, in designs as well as in dyeing, by the Art Schools at Leeds, Huddersfield, Stroud, and Trowbridge (with together nearly 8,000 pupils in 1865); the Art School at Bradford (established 1865) contributes to the improvement of taste in the manufacture of worsted goods; the Art Schools at Durham, Glasgow, Halifax, and Kidderminster exercised the most beneficial influence upon the manufacture of carpets, in design as well as in color; the cutlery of Sheffield owes its beauty of form and

of execution to the Art School which has been in existence there since 1843. In a like manner the education and the improvement in the taste of the working men in other departments of industry, has been brought about by these schools, which are scattered all over the country, and are to be found in all the larger manufacturing cities and centres of industry; this is true of the progress in cotton manufactures; the improvements in the forms of glassware, especially of that for every-day use; the better design and more skilful execution of higher-class goods in porcelain, china, and earthenware; the refinement of style in English iron-wares, &c. The practice of sending art objects and standard examples from the Kensington Museum to all parts of the country, enables many working-men, to whom a journey to London would be utterly impossible, to see good models, by setting these models down before their own doors, as it were.

"The exhibition made in Class 90 by the Science and Art Department of the Kensington Museum afforded sufficient proof for the truth of the statement just made in regard to the influence of the 'Schools of Art.' Exquisite free-hand drawings from all sorts of objects, water-colors, geometrical and architectural drawings, colored photographs from art objects in the Museum (to be used as patterns and as copies), works of sculpture, statues, &c., showed the colossal progress made by England within the last ten years, in this branch of industrial instruction, which may indeed be called the most important."

The following is from the "Report on Instruction in Drawing," by Prof. R. Niemtschik, of the St. L. Technical High School at Graz (Austrian Report of 1867, vol. vi. part xi. pp. 308, 309):—

"A cursory glance at the drawings exhibited by the Science and Art Department, South Kensington, London, was sufficient to convince the observer, that they came from an institution which deserves the name of an *Art Industrial School* in the best and fullest acceptation of the word. This opinion was upheld by the examples and copies, as well as by the work of the pupils. The examples and copies had been selected with rare knowledge, and comprised every thing that can be of service to the pupils in all the various departments; they are not only perfectly well fitted to awaken the feeling of the pupils for beauty of form and color, to raise them above the common level, and to preserve the artistic element in the industries, in spite of wholesale production by machinery; but they will also teach the growing artist that moderation is an essential requisite for the attainment of ethical truth and absolute beauty in art-industrial production, and that it is imperatively necessary to avoid so-called artistic effects, if solidity is to be attained. No trace of such perverseness is to be found in the copies: they are conceived and executed in a purely artistic spirit. This is undoubtedly the most natural way to diffuse artistic elements among the people, as well as to make artists of those engaged in industrial pursuits."

The following list of the names of the places where the English Art Schools subordinate to the South Kensington Museum are located is taken from the Report of the Science and Art Department. The list also shows the population of each place in 1871, and the number of students attending each school for the year ending July 1, 1872. Totals: 122 schools, with 22,845 students.—(*Transl.*)

	POPULATION.	STUDENTS.
Aberdeen,	88,125	198
Andover,	5,501	81
Bath,	52,528	191
Belfast,	174,394	430
Birkenhead,	65,980	192
Birmingham,	343,696	1,126
Boston,	15,576	95
Bradford,	145,827	169
Bradford High School,		140
Bridport,	7,666	94
Brighton,	103,760	153
Bristol,	182,524	431
Bromsgrove,	11,795	65
Burslem,	45,000	164
Cambridge,	30,074	152
Cardiff,	70,000	217
Carlisle,	31,074	162
Carnarvon,	9.370	205
Cheltenham,	41,923	326
Chester,	35,232	377
Cirencester,	7,073	97
Clonmel,	10,508	56
Coalbrookdale,	15,662	88
Coleford,	2,985	57
Cork,	81,000	204
Coventry,	41,647	268
Croydon,	70,000	199
Darlington,	40,812	250
Derby and Duffield,	61,358	312
Devizes,	6,848	61
Dorchester,	6,915	82
Dover,	28,506	139
Dublin,	245,722	
at Queen's Institute,		162
at Royal Dublin Society's House,		483
Dudley,	43,765	109
Dundee,	120,718	414
Durham,	14,888	140
Edinburgh,	196,500	
at Male School,		420
at Female School,		200
Exeter,	40,000	241
Farnham,	12,000	80
Frome,	12,500	136
Glasgow,	490,000	1,354
Gloucester,	31,804	132
Halifax,	60,000	215
Hanley,	40,000	214
Hanley-on-Thames,	5,600	29
Hull,	123,111	308
Inverness,	12,499	115
Ipswich,	43,136	335
Keighley,	24,704	123
Kendal,	13,442	84
Kidderminster,	20,803	134
Kilmarnock,	21,073	138
Lancaster,	17,350	341
Leamington,	22,730	144
Leeds,	259,201	
at Cookridge Street,		597
at 9 South Parade,		114
Leicester,	95,084	201
Leith,	42,000	58
Lewes,	10,735	79
Limerick,	39,828	122
Lincoln,	27,000	294
Liverpool,	473,346	
in North District,		680
in South District,		615
Macclesfield,	35,571	153
Manchester,	383,843	
in Bond Street,		502
at Long Millgate,		507
Metropolis(London),3,251,804		
at Bloomsbury School,		197
at Lambeth,		279
at North London,		162
at Rotherhithe,		24
at St. Martin's,		117
at Charter House,		131
at Spitalfields,		111
at West London,		494
at Westminster,		337
Monmouth,	6,000	44
Newcastle (Staffordshire),	15,049	64
Newcastle-on-Tyne,	130,915	394
Northampton,	44,871	77
Norwich,	75,000	151
Nottingham,	86,929	498
Oxford,	34,514	218
Paisley,	48,257	105
Penzance,	10,406	180
Perth,	26,377	150
Portsmouth and Gosport,	112,000	235
Preston,	85,428	178
Reading,	32,313	149
Ryde,	12,576	137
Salisbury,	12,711	183
Saltaire,	4,284	130
Sheffield,	239,947	271
Shrewsbury,	23,300	137
Southampton,	53,747	126
Sterling,	14,276	176
Stoke-on-Trent,	14,008	130
Stourbridge,	24,968	167
Stroud,	9,963	120

	POPULATION.	STUDENTS.		POPULATION.	STUDENTS.
Sunderland,	98,000	134	Warminster,	6,500	44
Swansea,	67,374	152	Warrington,	33,053	349
Taunton,	16,000	209	Winchester,	17,000	118
Torquay,	21,000	140	Wolverhampton,	74,000	179
Trowbridge,	11,487	60	Worcester,	40,000	163
Truro,	12,000	74	Great Yarmouth,	40,526	319
Wakefield,	28,079	133	York,	45,000	152
Walsall,	45,000	61			

RUSSIA.

Russian industry is also undergoing a revolution in the matter of form. The most varied elements are, indeed, still crossing each other in Russia, so that the total impression received from a survey of the industries of this country, in their present condition, is far from being harmonious; but upon closer investigation it will be perceived that a separation of the styles is gradually taking place, and that well-defined principles are beginning to assert themselves. Those who, at the last Paris Exhibition, were inclined to doubt the possibility of again reviving the old Slavonic ornamentation, and of introducing it into art-industry, were probably compelled to admit, in view of the work of the Russian goldsmiths and weavers exhibited at Vienna, that this style is not only still full of vitality, but that, under the fostering care of art-science, a great future even is in store for it. The efforts so far made, principally at Moscow and at St. Petersburg, to reinstate the national forms which were displaced by French influence, have been decidedly successful.

We will not investigate how much of Byzantine and of Greek art there may be in this Russian national style, as that is a question which is of small interest, even to the Russians themselves. Whatever was peculiar in industry to the Slavonians of four hundred or five hundred years ago is applied to modern industry; and, being original, it interests, and is sure of the applause of the public. By the efforts of science in the resuscitation of this style, it has gained a strong hold already, especially upon jewelry. But it does not contain elements sufficiently capable of development to make it likely that it will find its way into all parts of the world. It will therefore remain Russian; and, when the foreign elements (mostly antiquated French forms) shall have been completely done

away with in Russia, the industry of the country will again bear a national character, and will be sought after and valued for its originality. The Exhibition very interestingly illustrated the efforts which are now being made in Russia; and it was to be regretted, that in this case, as in so many others, the dismemberment already complained of prevented the possibility of a simultaneous view of the whole field. The various parts of the picture which should have unrolled itself systematically before the eyes of the visitor, could only be seen by laboriously searching for them at points far distant from each other. The "Society for the Encouragement of the Arts," at St. Petersburg, for instance, exhibited in the main gallery; the Museum of Art and Industry, together with the Drawing-School "Stroganoff" connected with it, had its place partly in the Northern pavilion of the "Amateurs," partly in the Northern transept of the Industrial Palace; while the most interesting productions of industry were allotted to the international market in the Rotunda. It is not impossible, therefore, that some important features may have been overlooked, in spite of conscientious research.

We will first look at the Art-School "Stroganoff," at Moscow, as it was best represented at the Exhibition, and gave a very good presentation of the various phases of its activity.

The systematic course of instruction of the preparatory and the special classes was shown in numerous portfolios, and by large tableaux on the walls. Besides these works, to which we shall recur later, the manuals and copies published by the institution for the purposes of instruction were also on exhibition. The copies proceed according to the usual course of instruction up to shaded ornaments; but the style of the ornaments used is principally Byzantine and old Russian. There were also shown suitable aids for teaching in linear drawing. For the further improvement of the pupils, provision is made in the rich collections of the Industrial Museum, which was opened in 1868, and which is especially devoted to the development of the school in the direction of national art. The aim of the institution may be more particularly detailed as follows: to provide skilled artisans for the art-industries, to emancipate industry from slavish imitation, and to educate it to originality. The most important influence upon these

efforts is exercised by the Museum, to whose exhibition a whole hall in the Northern pavilion of the Art-Hall had been devoted. In this exhibition there were to be seen (in selections) the models of ornaments, in plaster, clay, and electrotype, collected from the national monuments; facsimiles of old works of art, vessels, and other utensils; photographs; drawings from works of art, by which the Museum and the School mutually assist each other; and the publications issued by the institution. The exceedingly interesting "Stroganoff picture-book" (published 1869), which was issued for the purpose of showing the pictorial types introduced into Russia with the orthodox religion in the twelfth century, was displayed on the upper portion of the walls. As the principal achievement of the Museum of the Stroganoff school, we must, however, mention the publication of "The History of Russian Ornament," drawn from authentic manuscripts[1] of the tenth to the fifteenth centuries. The plates were carefully executed in color-printing, from the originals, in Paris; and this work may be said to supply the basis of the reforms which are at present aimed at in Russian industry. A special effort has also been made to purify the taste of the people by improving the style of the pictures of saints, so universal and so popular in Russia. This branch of art is to be led back to the gracefulness of the old Greek types, which were formerly peculiar to it, but which were lost by the introduction of foreign elements.

A considerable number of industrial artists and draughtsmen leave the school annually, and impart its tendencies to the industries; but, besides these artists, the institution also educates the drawing-teachers for other institutions (in the provincial towns), which follow similar aims. Instigated by the Stroganoff school, drawing, especially in Moscow, has made very satisfactory advances since 1867. The subject has not only been introduced into the Elementary and Real Schools as a compulsory study, but ten Sunday schools for persons engaged in industrial pursuits have also been organized, and at the University a special drawing course has been opened for the students, not to speak of the Drawing-Schools which many manufacturers have established for the benefit of their own

[1] Mostly Greek and Slavonian.

workmen. It is to be expected that the other manufacturing cities will follow this example.

Turning now to a closer inspection of the work of the pupils, we may premise, that the drawings throughout were animated by a fresh artistic spirit, and that in the preparatory classes, where drawing is taught in the proper sense of the word, the course of instruction is quite correct. We were unable to comprehend, however, why, in view of the pronounced tendencies of the school, copies from old French ornaments in crayon should still occur here and there, as the style of these ornaments is diametrically opposed to the square, exact character of the flat Russian models. But it must be remarked, that the works published by the Museum offer nothing very striking in the way of examples for the study of execution; and it may be, therefore, that the French examples are simply used as models of treatment. The drawings of the higher classes, from Byzantine and old Russian models, were exceedingly good. The decorative studies (in body colors) were treated with great technical skill; the style exhibited a tolerably free application of Russian national elements. But the strength of the school was shown in the drawings of vessels, ecclesiastical utensils, frames, &c., for execution in precious metals, which is quite natural, considering that Moscow is the principal seat of the goldsmiths. In the drawings of furniture, the ground-forms (quite correctly, by the way) adhere to the modern German and French fashions, while the preciseness of the national style appears only in the ornamentation. The very beautiful calligraphic specimens also deserve to be mentioned. Designing for textile fabrics is likewise practiced very thoroughly, but it leaves much to be desired in regard to harmony of colors. In this branch French flowers were again to be met with in the designs.

Geometrical drawing is practiced very thoroughly in the elementary courses, and projections and perspective are also treated very comprehensively; these subjects are succeeded by the special courses of architecture and machine-building, in both of which branches very good specimens were submitted. The verdict on figure-drawing must be less favorable; Julien's examples are copied in crayon on white paper, and too much value is attached to shading. The drawings from casts were treated too much like

lithographs; the academical studies exhibited a want of thorough understanding of the forms. It is true, undoubtedly, that Russian ornament does not make use of the figure, and receives its life from color alone; *but an art-school, even though it may be called upon to cultivate the ornament more particularly, must not disregard figure-drawing;* the study of the human figure is of the utmost advantage to the freedom and the refinement of form.

The "Society for the Encouragement of the Arts," at St. Petersburg, follows very nearly the same aims. It exhibited only drawings from the composition class of its Industrial School, which deserve to be designated as superior. Most of them were vessels and ecclesiastical utensils in gold and enamel, book-covers, profane and ecclesiastical works in wood, &c., principally Byzantine in style. The Museum of the society also exhibited an interesting collection of enamelled plates of the fourteenth and fifteenth centuries, as examples for the pupils, as well as a collection of national dresses, and other domestic objects, illustrative of the industry of the Russian people. The "National Ornaments" published by the institution have reference mostly to textile art, and follow the general reformatory tendencies now prevailing in Russia.

Besides these schools of an especial art-industrial character, the Technological Institutes of St. Petersburg and of Moscow were also represented at the Exhibition by aids for teaching for practical technical education.

In both of these institutes particular attention is paid not only to the theory, but also to the practical exercise, of the various trades; and the Technical School at Moscow more especially is so organized, that its pupils can be educated in the workshop in all the branches of machine-building and mechanics. This institution is divided into two sections; the first, a general scientific section, the other, a special section for the different branches, each with a course of three years. The aids for teaching, shown at the Exhibition, had reference only to practical instruction in the workshop, which is given quite systematically, in turning, joinery, metal-turning, locksmithing, &c. The character of the school, however, is not identical with that of the French Intermediate Technical Schools (at Châlons, Aix, Angers, &c.), which train only technically educated foremen; it is simply a High School, in

which the theoretical department is equal to the same department in other European High Schools, the practical instruction being added only to complement the theoretical knowledge. For this purpose the institution is connected with a machine-shop, employing paid day-laborers, in which orders for steam-engines, pumps, and other agricultural machinery are executed.[1]

Unfortunately, for want of space, only fragments of the various categories of aids for teaching could be exhibited; which was to be regretted, as the incompleteness of the Exhibition made it impossible to gain a full and clear comprehension of the pedagogical bearings of this feature of the school. According to the arrangement adopted, the aids for teaching for the different branches are divided into three groups: the first comprising those tools with which the apprentice is to make himself familiar before he commences to work, and the use of which is to be shown to him while working; the second category embracing a collection of models, intended to teach, systematically and progressively, the various knacks which must be learned in each special branch; the last group, finally, being formed of objects, or parts of objects, in the production of which all the various manipulations occur, which were practiced in the previous courses.[2]

Suffice it to remark here, that these excellent collections were most favorably criticised by the specialists at the Exhibition, and that the school, during the four years of its existence, has worked with splendid success in accordance with the system just sketched. The arrangement of the Exhibition was exemplary; and the director of the institution, M. Victor Della-Voss, was present to give any further information that might be demanded.

The Polytechnical School of St. Petersburg ranks as a High school since 1864; and practical execution is also taught quite extensively in this institution, with only this difference, that more play has been given to the chemical faculty. Only standard models for machine-building, executed with mathematical precis-

[1] The shop produces machines to the yearly value of one hundred thousand florins. Some of its productions were exhibited in the Machine Hall.

[2] A detailed list of the tools, &c., exhibited by the Moscow Technical School may be found in the original report by Prof. Langl. The list has been omitted here, as it does not bear directly upon the subject of art-education. — *Transl.*

ion, and a number of excellent machine-drawings by the pupils, had been sent to the Exhibition by this school.

Finland appeared quite independently in Group XXVI. with drawings by pupils, as well as with aids for teaching. Whoever followed the efforts made in behalf of education in this Northern province, as they were sketched in the short notices of the country and of the objects sent by it, contained in the little pamphlet which had been provided, must have felt himself strongly attracted towards the specimens on exhibition.

The country is comparatively poor, and its industry is still in a low state of development; navigation and agriculture are still the main sources of income for its inhabitants; nevertheless educational affairs have looked up most satisfactorily during the last ten years, and are rapidly progressing, especially since they have passed from under the control of the church (1867). More attention has also been paid to drawing, since the creation of the "Direction of Manufactures," a special board whose duty it is to look to the elevation of the industries. Sunday and Evening Schools for the practice of drawing have been opened in all of the more important places; and the higher artistic training of working-men is provided for by the Industrial School at Helsingfors. In most of the People's Schools drawing is also practiced; and specimens from the Normal School, and from the Teachers' Seminary at Jyväskylä, were on exhibition. The results were modest, but gave evidence of a good method. The copies for elementary instruction, by G. A. Hippinsen, are, however, too small, a fault which was also to be censured in the drawings by the pupils. But on the whole it was apparent that this people has a talent for form, and that it will only need good teachers to educate its artistic feeling.

SWITZERLAND.

The Educational Exhibition of Switzerland was held in the upper story of the elegant "Châlet Suisse," which had been erected as a special object of exhibition between the third and fourth transepts of the Industrial Palace. For the most part, however, it consisted only of the aids for teaching in use in the Swiss schools, the representation of the methods of instruction, statistical reports, &c. Specimens by the pupils had been sent only by the Special School of Art-Industry of the City of Geneva. An insight into the state of drawing and of art-education was nevertheless to be obtained by an inspection of the educational material, and of the industrial products of the country, as shown at the Exhibition. But the survey was made somewhat difficult by the separation of the various cantons, each of which, in consequence of its local conditions and the character of its inhabitants, has its own constitution, and its peculiar arrangements in regard to education.

In spite of these diversities, a certain unity prevails in the instruction in drawing; and it is practiced everywhere, even in the infant-classes. In the Elementary Schools (consisting mostly of three classes), geometry has also been introduced, and this subject is continued in the Secondary Schools. In the Industrial Schools, which are almost identical with the (former) Austrian Lower Real-Schools, and which are divided into commercial and technical sections, drawing receives careful attention, especially in the technical sections; it is also practiced in the institutions for training teachers, and the candidates must pass an examination in the subject.

Owing to the character of its soil, Switzerland is constrained to look to industry more than any other country. The want of raw

produce soon led its inhabitants to cultivate those trades which border upon art-industry; and certain branches have been carried to such perfection, that they have given rise to extended exportation. Swiss wood-carvings, watches, textile fabrics, braids, &c., are celebrated all over the world, and bring millions into the country every year. But in spite of continuous intercourse with foreign countries, and of numerous drawing-schools for the elevation of the artistic element in the industries, little progress (as far as taste is concerned) is to be observed in the productions of the country. Old traditions are adhered to in all branches of industry, and the schools are simply used for the diffusion of inherited technical skill. The Swiss wood-carvings are still given to pure naturalism, without regard to the requirements of the object; and, even in the more important schools and work-shops of this branch of industry, no profounder comprehension of art has found entrance as yet.

In Meiringen, Interlachen, Brienz, and other places, for instance, casts from nature are alone used for study, and plant-forms play the principal part everywhere. Bofingen, of Interlachen, exhibited a series of such models, which, in arrangement and technical execution, were the best of all of their kind to be seen at the Exhibition. Flowers with perforated stems, and with leaves that were hollow underneath, often of an arrangement that appeared to have been complicated on purpose, had been transferred into plaster with the utmost truth. These models might be recommended more especially to the German schools, as the latter are frequently bound up too rigidly by style, so that the forms are wanting in healthy freedom. Among the works of Althans, Moor (Meiringen), J. Grossmann (Ringgenberg), Flück, Stähli, Roetter (Brienz), &c., on the ground-floor of the Swiss Châlet, there were to be found plants, leafage, branch-work, and the like (besides graceful mannered animals), of the most perfect technical execution, but without any solid nucleus. The Swiss need a "Frullini,"[1] to turn their skill to better account in more refined and more artistic productions.

Watchmaking, which has its seat in the South-West, in the Jura

[1] *Lodovico Frullini* of Florence, a wood-carver, whose frames, panels, &c., executed in the Renaissance style, were greatly admired at the Vienna World's Fair, as well as at previous exhibitions.—*Transl.*

of Neufchâtel and principally in Geneva, likewise shows no changes as regards artistic embellishment. French taste is still prevalent; only here and there, in Borrnet's, Delesnaux's, and Chautre's watches for instance, a better style is to be seen, approaching nearer to the smooth, insipid English, however, than to the German or Italian style. The same is true of jewelry; but possibly a change in taste will set in earlier in this department than in any other, and very likely through the influence of England, as England has made considerable progress in the reform of this branch of industry. The Special School of Art-Industry at Geneva, above alluded to, is also endeavoring to aid the refinement of form. The drawings exhibited, mostly jewelry, were brilliant in execution, and gave evidence of the best intentions in the choice of motives. Besides copies from later French works ("L'Art pour Tous," &c.) there were also to be found studies in all styles, plant-forms converted into ornament; methods, in short, which give an assurance of progress.

In silks French forms were found almost throughout, while in the cotton and linen fabrics the peculiar forms recalling the Orient, which have been in use for so long a time, are still preserved.

As long as art proper does not find better care in Switzerland, it cannot be expected that the forms used in industry will be refined to any important extent. First of all, there is still wanting a common centre for art, an academy in the country itself, to give a stable foundation to national art. The general government expends only two thousand francs a year on historical art; the cantonal governments and the several communes likewise do but little for it. It is therefore not to be wondered at, that most of the Swiss artists emigrate to Germany, France, and Italy.

Switzerland has museums in nearly all the more prominent cities, some of them, as for instance those in Basle, Winterthur, and St. Gallen, of considerable importance. But, with the exception of the archæological collection at Zürich, their arrangements are such that they are but little suited to advance the art-education of the country.

Great activity is, however, shown by the various art associations and societies of artists in Aargau, Bern, Basle, Freiburg,

Geneva, St. Gallen, Lucerne, Schaffhausen, Solothurn, Winterthur, and Zürich. Exhibitions are frequently held; collections of paintings have been begun, the more important works on art are purchased, &c., for the purpose of awakening a feeling for art in the people.

Of the aids for teaching exhibited by the various cantons, the following must be specially noticed: —

Canton Aargau. — "Copies for Stigmographic Drawing" by A. Burri, also "Copies for Geometrical Object Drawing;" the latter autographed, and accompanied by explanations for the pupils.

Canton Bâle-Campagne. — "Copies for Freehand Drawing," by A. Hutter (teacher of technical drawing at the Cantonal School at Bern, and at the Seminary at München-Buchsee). These copies begin with geometrical figures, and progress to plant-forms. In linear drawing they embrace geometrical construction, projections, and perspective.

Canton St. Gallen. — "Models for Elementary Class-Instruction in Freehand Drawing," by G. Bion; various geometrical forms cut from colored cardboard, to be attached to the blackboard in combinations.

Canton Turgau. — "Copies for Technical Drawing" for Industrial Improvement Schools, by J. H. Kronauer, professor in Zürich; geometrical principles followed by mechanical and architectural examples; thirty plates of very beautiful execution. By the same author, "Elements of Geometrical Drawing," for People's and Industrial Schools. Schoop's "Drawing-School for People's Schools," progressing nicely from stigmographic copies to freehand ornament.

Canton Tessin. — "Corso Parietale d'Ornamenti," by A. Rossi; large wall-charts in strong, black outlines, progressing from the simplest leaf-forms to larger flowers and ornaments, also animals, &c., somewhat perplexing in the course of instruction. By the same author, "Corso Progressivo d'Ornamenti," ornaments in outline, and shaded in two crayons; hard in execution. Older ornamental works, engraved on copper, by the same author, were also exhibited, but they left much to be desired in regard to taste. The same is true of the works by Prof. Ferri of Lugano. Ferri also exhibited his engravings of the charming marble reliefs of

the Church of St. Lorenzo in Lugano, but his manner of representation is such that the forms appear as if they belonged to a later century.

Canton Waadt. — "Recueil de Dessin Linéaire," by Th. Stenilen; based upon antiquated principles.

Canton Zürich. — "Copies for Geometrical Drawing," by Ferd. Graberg; mostly architectural motives. By the same author, "Wall-Charts for Elementary Instruction in Freehand Drawing," forms of leaves, in which, however, the peculiar shadows at the edges are troublesome, rather than helpful.

There were furthermore exhibited "Copies for Landscape Drawing," in drawings by A. Corrodi, which commended themselves by their attractive motives and neat execution. The same author's pretty "Studies from Plants for Ornaments," must also be mentioned.[1]

[1] It may surprise the reader to find no allusion to the Polytechnical School of Zürich in Prof. Langl's "Report." This omission is, however, explained by the fact that the Polytechnical School did not exhibit at Vienna (the Official Swiss Catalogue, at least, makes no mention of such an exhibition), and that Prof. Langl's attention was directed more especially to artistic and art-industrial education than to purely technical education. That the instruction given at the institution in question is purely technical, employing drawing only as a means for reaching technical ends, becomes apparent from the list of sections into which the school is divided:—

1. The School of Architecture.
2. The Engineering School.
3. The Mechanical-Technical School.
4. The Chemical-Technical School.
5. The School of Agriculture and Forestry.
6. The Section for the Training of Teachers in Mathematics and Natural Philosophy.
7. The Section for Philosophy and Political Economy.
8. The Mathematical Preparatory Course.

The great excellence of the school, as well as the pecuniary advantages derived from it by the city of Zürich, is plainly indicated by the number of its scholars, which, as will be seen from the annexed list, are attracted to it from all parts of the world. According to the official "Report on the Organization and the Activity of the Swiss Polytechnical School at Zürich," prepared for the Vienna World's Fair, the number of scholars attending the school in 1872 amounted to 689, of which 242 only were natives of Switzerland, while 447 came from foreign countries, as follows: Germany, 42; Hungary, 79; Bohemia, 14; other Austrian states, 98; Russia and Finland, 44; Poland and Lithuania, 50; Italy, 50; England, 9; Holland, Belgium, and Luxemburg, 6; Greece and the Principalities of the Danube, 18; Sweden and Norway, 9; Denmark, 5;

France, 13; Turkey and Serbia, 3; North America, 4; West Indies, 1; East Indies, 2. Besides these 689 regular scholars, there were also 361 "auditors," which are not classified. These "auditors" are mostly scholars of the other educational institutions of Zürich, who attend only certain lectures at the Polytechnical School.

For further information on this subject, the reader is referred to the work by Mr. John Scott Russell, previously mentioned. (See note, p. 56.)—*Transl.*

THE NETHERLANDS AND BELGIUM.

The participation of the Netherlands in the educational group at Vienna, as at former World's Fairs, was not very active. Besides various works having reference to the schools, specimens by the pupils were exhibited only by the "Society of the Workingmen" in Amsterdam. A survey of the department of the People's and Middle Schools, was, however, given in a report,[1] which the government had caused to be written especially for the Exhibition; and from this report the following data concerning instruction in drawing have been extracted: —

According to the law of 1857, the elements of the knowledge of form and of drawing were admitted into primary instruction. The first of these subjects, however, is not yet fully understood everywhere, especially where the schools are in the hands of older teachers. It has been of but little use wherever it was treated as a sort of geometry, but without the rigorous logical demonstration which is needed by the latter subject, and has been conducive to improvement only in those schools in which it was used as an aid to the imaginative faculty of the pupils, or as a preparation for instruction in drawing. Drawing itself has also received its just treatment in a few only of the public and private schools; as a general thing it is confined to copying (upon slates) the figures which have been drawn on the blackboard. It is only of late that some of the assistant teachers have received certificates in this branch, so that an improvement may now be looked for.

In the Middle Schools, regulated by law since 1863, drawing plays a more important part, especially in those which have been destined for the education of the working-classes. Formerly there existed only Drawing-Schools proper, in which instruction was con-

[1] Written by St. Pravé. inspector of Primary Schools.

fined to freehand and linear drawing, and so-called Industrial Schools, in which mathematics and the natural sciences were also taught. According to later regulations, the Middle Schools of this class are to provide for general education in an enlarged sense, and they have therefore been organized as Citizens' Schools proper (with day and evening courses).

It was intended to establish such schools in all places having more than ten thousand inhabitants, but it has been impossible so far to carry out this idea to its full extent. In many places the old Drawing-Schools also remain in existence alongside of the new institutions. The attendance is continually growing, especially in the evening-schools; at the day-schools it is smaller. The pupils are generally held to participate in all the branches of study, but in some of the schools they are permitted to choose single subjects: this applies more especially to drawing in the higher schools.

The number of Drawing-Schools still existing in 1871 amounted to thirty, with one hundred and eight teachers and twenty-five hundred pupils. In twenty-two of these schools, instruction embraced only freehand and architectural drawing; in the others mathematics, natural philosophy, and mechanics were likewise taught; in three of them also modelling. The Royal School for the Arts of Design at Bois-le-Duc, the Academy of the Arts of Design at the Hague, and the Industrial School organized by the Society of Working-men at Amsterdam, are among the best of these institutions.

In the higher Citizens' Schools, four hours in each of the two lower classes, two hours in each of the three upper classes, are devoted to drawing. At the graduating examination, the candidate must be able to draw and shade an ornament from a cast, and to sketch a head from a copy.

This general outline must suffice to give an idea of the organization and the legal requirements of the schools in question. Very naturally the material at hand was not sufficient to show the influence exercised by drawing-instruction in the Netherlands. The Exhibition only made it apparent that not a trace is left in Dutch industry of the period of its glory in the sixteenth and seventeenth centuries.

Not much of the modern current was to be seen in the drawings exhibited by the School of the Working-men at Amsterdam, already alluded to. The ornamental objects were generally executed understandingly, French and German models having been used for the purpose. Pen-drawings from vessels and decorative motives deserve to be specially mentioned; the figure-studies (after Julien) were weaker. Linear drawing, on the contrary, was represented in all its branches by very praiseworthy specimens, which exhibited a practical understanding of the subject throughout. The models of plaster and of wood which were exhibited did not rise to very complicated forms, but nevertheless gave evidence of good tendencies.

Of the works having reference to drawing and art-education, we must mention, "The Little Draughtsman" (for slate exercises), by J. Groeneveld, a systematic school for the first stages, the beginning of which is good, while the more advanced copies go beyond the executive ability of children; also "Studies from the Living Model," by J. H. Egenberger, in two crayons, among which the outlines are preferable to the shaded drawings; the same author's "Minerva's Drawing Lessons," copies for figure-drawing, leave much to be desired in point of execution. Berghm's "Drawing Examples for School and House" are boldly drawn, but heads of animals are out of place in such a work.

In architecture the excellent works of the "Society for the Propagation of Architecture at Amsterdam" were exhibited, and in engineering the proceedings of the "Royal Institute of Engineers." Th. M. M. v. Pricken's "Civil Architecture," very beautifully gotten up, must also be noticed here.

Of the exhibition of the Asiatic colonies of the Netherlands, the grand work on the monuments of Bôrô-Boudour, in the island of Java, published by order of the minister of the colonies, deserves to be mentioned more especially.

Belgium. — Belgium was represented in Group XXVI. almost as scantily as the Netherlands. The government had sent only plans and views of the more important school-buildings, charts relating to educational matters, some pedagogical books, and official reports, laws, &c., these latter in closed cases.[1]

[1] It was impossible for the reporter to gain access to them.

The Boarding-School at Carlsbourg, under the management of the Christian Brethren, made a more comprehensive exhibition, various aids for teaching, and specimens by the pupils, having been so arranged as to give a very good insight into the working of the institution. The aids for teaching descriptive geometry, executed by J. J. Piron, the director of the school, formed the most prominent feature of this exhibition. The course of instruction was systematically illustrated by means of large wall-charts; while exceedingly well-executed models in cardboard, showing the construction-lines, and accompanied by their projections, gave a still clearer idea of it. These models were among the simplest, and at the same time the most practical for their purpose, that were to be seen in the Exhibition; besides their convenience and their cheapness, they offer an advantage over other models, as the three planes are movable, so that, by laying them down, a very clear insight can be given into the representation of the projection. It is said that these models are to be published by the government, which would certainly be in the interest of education.

The specimens by the pupils of the school were especially praiseworthy in linear drawing; and it appears that descriptive geometry is cultivated in the institution, in preference to other subjects.

Of other aids for teaching, we must mention Stroesser's wire-models for instruction in stereometry, trigonometry, and crystallography. Their practical character is everywhere known, and they have frequently been favorably spoken of by specialists, even in the papers. In the mathematical bodies, the distinction which is marked by color between the ground-form, and the transformation of the figure, is very instructive, and aids the understanding materially. For class-instruction, however, they appear to be too small. Their maker also exhibited models of wood, and apparatus for perspective.

F. Licot, Director of the Drawing and Modelling School at Nivelles, submitted a "Course of Linear Drawing by Sight, Based on Geometry," in which the elements of form are practiced in conjunction with freehand drawing, which is followed up by projection and ornament-drawing. The author continues to combine the elements of freehand with those of linear drawing, where in reality the division already sets in of itself, and in his work gives

a medley of copies in both branches, which, we take it, cannot be of advantage to either subject. For the study of perspective, F. Bossuet's "Summary of a Treatise on Linear Perspective," must be noted as an excellent little work, as far as systematic arrangement and perspicuity of the drawings is concerned.

Glancing finally at the contiguous exhibition of the Belgian booksellers, we shall have to mention the artistic, archæological, and art-industrial publications of Ch. Claesens (Liege), and the interesting work by C. Colinet and Soran, "Collection of the Remains of our National Art of the Eleventh to the Sixteenth Centuries," which appears in Brussels, in parts.

SWEDEN AND NORWAY.

Whoever visited the pleasant rooms of the Swedish schoolhouse at the Exhibition must have observed that very great attention is paid to object-teaching in Sweden. There were to be seen pictorial representations for natural history, characteristic landscapes for geography, models for geometry, &c.; in short, each subject had its objects for illustration, as far as possibility would permit. The value of these means of instruction being correctly appreciated, drawing, by which the eye must be taught to see, has also been carefully attended to; and the effort to carry out a practical system in the teaching of this subject was apparent even in the wall-charts which had been hung up in the schoolroom in question.

The comparatively poor and thinly settled country possesses no special branches of industry in which form plays an important part. With the exception of the old faience and porcelain manufactories (represented at the Exhibition by Gustavsberg and by Börstrand), the industries are mainly occupied in providing for the necessities of the country itself, which, as far as articles of luxury are concerned, have kept within such moderate bounds, that up to the present a national character in forms could not develop itself. But the efforts of the government to elevate the education of the people by means of schools, even in the remotest districts, are very commendable; and a clear picture of the present condition of the People's and Middle Schools was given in two reports, which had been written expressly for the Exhibition. It must also be mentioned with praise, that the government had taken care to supply all the necessary verbal information, while it was unfortunately impossible for the reporter to obtain such information from other, even very important states, in spite of persistent efforts.

Geometry and linear drawing begin in the People's School; but

very naturally the subject cannot be introduced everywhere, since, among the 7,528 educational institutions, there are 1,145 travelling schools, which change their locality from two to four times a year, so as to provide the children of the poorer districts of the North with at least the most important parts of elementary education; in the stationary schools the subject is frequently well taken care of.

Conformably to the age of the pupils, geometry is limited to the properties of geometrical figures, their measurement and computation. Freehand drawing, which was introduced only quite lately into the more prominent institutions, is mostly practiced from the wall-charts by G. Salomann, or those by Sandberg. They offer simple geometrical forms, which are quite practical. In some of the schools (and this is true more especially of Stockholm), where drawing had probably been practiced before, this good method unfortunately has not yet been introduced, and "pictures" were again to be seen among the specimens, copied from Berlin and bad Parisian examples, which may amuse the amateur, but which are absolutely to be condemned for rational instruction in drawing. Very good specimens were exhibited by the St. Claras School (Stockholm); the St. Nicolai School also exhibited large drawings of good ornaments outlined with the brush; but the figure-drawing from wall-charts was again fatal, nor can we agree with linear drawing as practiced at this institution. The schools St. Maria, St. Nicolai, and St. Katharina furthermore exhibited wall-charts for instruction in natural philosophy and natural history, executed by the scholars, which may be very practical for these subjects, but must certainly be any thing but advantageous to drawing. Very satisfactory results in ornament and in geometry were shown by the Deaf-Mute Institution (Manilla-Institute) of Stockholm.

In the Swedish Middle Schools, which are divided into real and humanistic, drawing is compulsory in the real, and in the four lower classes of the humanistic division; in the upper classes it is elective. So far, only two hours each week are set apart for drawing by the plan of instruction, which would appear to be insufficient, at least in the real division. Instruction in drawing is given by special teachers, but they are still classed among what are called "practice teachers," and are subordinated in position to the lectors, adjuncts, and fellows.

Excellent specimens by pupils of this class of schools were exhibited by Gothenburg.[1] In the Higher Middle Schools of this city, drawing begins with Salomann's wall-charts, and then passes on to drawing from geometrical solids, with very good success; this is followed up by figure and ornament drawing, mostly from French copies. In spite of the many pedagogical defects of these originals, there were specimens among the drawings of very superior execution. The whole Exhibition, perhaps, had no copies to show in two crayons from Julien's heads, which were executed as neatly as these; the drawings from casts (the Stuttgart collection), and other studies from plastic objects, gave evidence of a proper understanding of the forms; besides these there were also found landscapes after Calame and other good masters. Linear drawing is limited to the most necessary elements of planimetry and stereometry. The Middle School at Oerebro was also represented by similarly good results in freehand drawing.

The best, however, which had been submitted by Sweden in the way of drawings, came from the School of the Industrial Society at Gothenburg. This institution was founded in 1848 by an association of manufacturers, for the purpose of providing an opportunity for the working-men in the various trades to improve themselves in the most necessary technical and artistic branches. The means not being sufficient for a more efficacious development of the school, in accordance with the demand of the times, and as the necessity for the school was recognized on all sides, the commune interested itself in it in 1865, and enlarged its sphere in all directions. The school is still immediately under the control of the Industrial Society, which always elects its director. The instruction is general, and the term lasts from Sept. 15 to the month of May following. In drawing, the following branches are taught: freehand drawing, decorative painting, perspective, linear drawing (geometry), machine drawing, architectural drawing, and modelling.

Instruction in freehand drawing is given in four classes, each class corresponding to the capacities of its pupils, and each taught by a separate teacher; in case of overcrowding, the classes are

[1] In the attic of the schoolhouse.

divided into parallel sections. Drawing-materials are furnished to the pupils free of charge. The attendance rose from twenty pupils in 1850 to five hundred and eight at present, which is sufficient evidence of the prosperity of the school. At the yearly exhibitions, premiums are awarded for the best drawings.

The specimens shown at Vienna were taken from the following classes: Class I. Elements of freehand drawing from Salomann's wall-charts, very neat in execution; Class II. Continuation of outline ornament and exemplary practice in object drawing; Classes III. and IV. Drawing with various materials, partly from good copies, partly from more complicated models. There were ornaments from casts (mostly Renaissance) among the drawings, of brilliant execution, and also well-executed heads and figures (from the antique).

The section for decorative painting exhibited some specimens (in body colors), the bulk of which were in French taste.

Linear drawing is practiced very systematically and thoroughly. The elements of geometry are succeeded by projection, with immediate application to practical cases; this is followed up by the construction of shadows and of perspective, in which latter the various methods in use are brought to the knowledge of the pupils.

Drawing for specialties is principally practiced in architecture and in machine-building, and many very excellent specimens were exhibited in both branches.

It was only to be regretted that the space allotted to the specimens of this institution was so cramped, as to make it difficult to survey them as a whole. It is evident, however, that correct methods are employed in all the branches, and the results of instruction, as far as submitted, deserved undivided praise.

Norway did not exhibit in the educational group; and in industry it was also represented only by its national productions, which served merely to show the traditional native taste. The carvings did not exhibit any special peculiarities of form, nor was there any thing to be seen in them of a peculiar style of ornament. The laces, embroideries, and textile fabrics showed more individuality in design, certain geometrical forms prevailing in the latter, while the colors were selected not without taste. The Norwegian jewelry is uncouth and inartistic.

Some good things, were, however, found in the Art Hall; but these must not be credited to art education in the country itself, but to the German Academies, as most of the Norwegian artists reside in Dusseldorf, Carlsruhe, Munich, &c.

DENMARK.

The exhibition of this country in Group XXVI. was likewise meagre. Of drawings there were only submitted some specimens from the People's Schools of Copenhagen: they consisted of projections applied to art-industrial objects, and of outline ornaments, partly from copies and partly from casts, mostly from the antique. It seems as though the spirit of Thorwaldsen had penetrated even into the schoolrooms; we meet it everywhere in industry, and his drawings were found charmingly adapted to Greek vases, vessels, &c., which latter are perhaps imitated nowhere as faithfully as in Copenhagen. The Grand-Master of sculpture himself was represented at the Exhibition by successful small copies of his works in biscuit-ware (by Jörgensen of Copenhagen); but his memory was most vividly recalled by Jerichau's "Wedding of Alexander and Roxane," in the Art Exhibition. Denmark owes its refined taste in industry simply to the impulse given by its great artist; and it is pleasant to see how understandingly the forms are always adapted to the material.

Brinkoff (Copenhagen), exhibited drawings of furniture, in charming style, the simple, noble Renaissance forms of which were practical withal. Christesen's gold and silver ware showed the most refined feeling in their rhythmical outlines.

SPAIN AND PORTUGAL.

In no country, aside from Italy, does the past of art-industry offer so much that is of interest as in Spain. Arabian-Moorish art brought forth its fairest flowers upon this soil; and quite a number of new industries sprang up when, after the expulsion of the Moorish princes, the new continent poured its wealth into the country. It was then that cities like Cordova, Toledo, Madrid, enjoyed a world-wide reputation for their special products. And with the names of a Murillo, a Velasquez, and others, Spanish art also rose to a height which attracted the eyes of the whole world. Yet all this has passed away, and hardly any thing is left of it but the memory.

In Italy the ancient technical knowledge in certain branches of art-industry has been handed down to our own day; and the old forms still live in the drawing-schools, and through the schools in industry. But in Spain we would look for these elements in vain. The political storms which have incessantly blown over the country, and which are still hindering all development by their baleful influence, have long ago torn the threads reaching downwards from the glorious past; and whatever of industry Spain has to offer at present, consists mainly in the imitation of ancient faiences and damaskeened work. On the whole, however, French taste is dominant.

Any one examining the textile fabrics of Barcelona and of Valencia at the Exhibition must have noticed that the reformatory influences were hardly perceptible in them, except occasionally, perhaps, in the products of the latter city; generally speaking, the most unsystematic caprice rules supreme in color as well as in form.

The exhibition of Group XXVI. had been housed on the

second floor of the Spanish pavilion in the first zone; and, to judge from the catalogue, contained much that was interesting and important, as characterizing the present situation. But it was impossible for the reporter to obtain any intelligence concerning the material on exhibition; for there were neither numbers upon the objects, which would have made it possible to find them in the catalogue, nor were the representatives at the Exhibition able to give any information whatever.

Of freehand drawings there were some framed specimens, away up on the walls, — heads after Julien, pretty bad in execution, and French ornaments in crayon, a few also in India ink. Some well-drawn heads in charcoal, from casts, were exhibited in a closed case; whence they came no one could tell. There were also linear drawings in bound volumes, from the "Central Normal School" of Madrid, embracing the knowledge of form, geometrical ornaments, architectural details, and parts of machinery.

In view of the absence of art-industries of any importance, it is quite natural that artistic drawing should receive but little care in Spain, while more stress is laid upon technical drawing, which finds a rich field in the necessary construction of railroads, ports, strategical works, &c.

In consequence of this state of affairs, all the works on drawing which were exhibited showed a preponderance of the technical element. We must especially mention M. Borell's "Theoretical and Practical Treatise on Design," as applied to the arts and industries, which excelled in superiority of execution (copper plates), and in its practical arrangement in progressive stages. Geometry, projections, geometrical ornament applied to architecture, construction of shadows, &c., are treated in the first parts, and in freehand drawing the ornament is developed from its geometrical ground forms, the acanthus-leaf being taken as a basis. Linear drawing is then continued with architectural objects, Greek, Roman, and Gothic monuments being principally taken as examples. The text, with very beautifully-executed woodcuts, explains the historical development of the styles, and, with the limitations alluded to, may be looked upon as a history of architecture.

Borell is professor of drawing at the Institute of San Isidoro,

in Madrid, and is still engaged in the completion of his work, of which only six parts have so far appeared.

We must also mention N. Valde's "Manual for the Engineer and the Architect," and Artemis Perez' "Academy of Artillery" (Madrid, 1868), as belonging to the more important works on constructive drawing, and more especially on machine drawing.

For topographical and map drawing an excellent guide is offered in the beautifully gotten up work, "Topographical Drawing," by M. Rindavaets. Of the higher technical schools there were only to be seen specimens by the pupils of the "School of Industrial Engineers" at Barcelona. They consisted almost exclusively of machine drawings, and may be called superior in every respect.

A teacher at the same institution, D. Joaquin Mata, also exhibited a work entitled "Course of Industrial Drawing," in which geometry and its application to architecture and machine-building is very beautifully treated; the part on freehand drawing is less commendable, as it is merely made up of copies of older French originals.

Whatever else there was of linear drawing, was of older date and of but little importance, so that it may properly be ignored here.

Portugal. — Little Portugal had taken much better care than Spain to represent her educational affairs at the Exhibition, although the reproach must again be repeated, that very insufficient provision had been made to supply the necessary information concerning the objects exhibited, and that the reporter was therefore compelled to make many a journey in vain.

Portugal had a schoolhouse at the Exhibition; and in it there were to be seen the usual aids for teaching, together with various specimens by the pupils. The impression made by the whole was satisfactory; but the statistical and legal details were wanting, which would have enabled a closer examination, and which had elsewhere been furnished in the shape of tables or pamphlets. The reporter could only glean some of the more important points relating to the educational system of Portugal from the "Gazeta Pedagogica" of Lisbon, which was on exhibition among other

things; and these points, as far as they relate to drawing, shall briefly be mentioned here.

Portugal is aware of her isolated position, and knows that she cannot play an independent part in the development of civilization, as her language is hardly spoken outside of her limits, and the most important productions of literature must therefore remain foreign to her people. But she is doing her best to follow in the wake of progress, and is endeavoring, especially by means of her schools, to come into contact with the cultured nations of Central Europe. It is very natural that France is principally looked to in this respect. French is therefore compulsory in all the schools; and all the other arrangements are also very generally fashioned after French patterns.

Industry is ruled entirely by French taste; the national element is so simple and unimportant, that it can hardly be noticed. The imitation of old French art-industries, such as the Palissy faiences, may be mentioned as a specialty, but is only another proof of the dependency of form upon France.

Manier, in his "Map of Primary Instruction in Europe," published in Paris, in 1867, placed Portugal in the last category, and asserted that "the population is ignorant, the schools are few and badly attended. One pupil only is counted to eighty-one inhabitants." But this was a decided error, even at that time, as in 1864, according to statistical reports, there were already 2,774 schools, with 99,256 pupils, which gives one pupil to every forty-two inhabitants. Since then, in spite of the unfavorable political condition, nothing has been neglected to elevate the education of the people, and to diffuse general culture especially by establishing Lycea. Portugal, at present, has a Lyceum in each of its districts (twenty-one with the islands), whose directors are at the same time inspectors of the People's Schools, and all of whom are again subordinated to a Director of Public Instruction. Within this organization all instruction is governed by uniform principles. The Teachers' Normal Schools of the country have also made considerable advances of late.

Drawing is taught in all the schools; and the various institutions were represented by specimens from the "Real Casa Pia," the "National Lyceum," and the "Normal School," all of Lisbon.

But it was unfortunately apparent from the freehand drawings, that the methods pursued are not the most suitable, although the intentions are the best. Above all, there is a want of good copies. At the "Real Casa Pia" elementary drawing is taught according to the "Elementary Course of Design," by Prof. A. J. Picard, in copy-books divided off into squares, and gotten up specially for this institution. The progression in this course might, indeed, be approved of, but it was seldom adhered to in the copy-books on exhibition, as quite a variety of different subjects had generally been taken up too rapidly in succession, and crayon and pen had been employed too early. Following Picard's course, drawing is continued from French ornaments with very mediocre results. The exercises in drawing from nature were very scanty.

Linear drawing fares far better at the institution; and better principles were discernible even in the "Relatorio" for the "Industrial Course," which had been submitted. The most important propositions of plane geometry are gone through with, and the pupils then draw architectural details, columns, &c. These are succeeded by projections and shadows, very thoroughly treated, which in turn are followed up by machine and architectural drawings (mostly from the French "Etudes au Lavis"). Among the latter class especially, there were to be seen specimens of excellent execution.

Specimens of an incomparably better character were exhibited by the "National Lyceum," but the linear drawings were again in the majority. The very excellent works by F. Motta, drawing-teacher at the Lyceum, were also on exhibition. "His "Compendium of Linear Design" follows the plan adopted for J. Picard's work. Geometry and projection are systematically treated, and these are succeeded by practical problems in architecture and machine-building. In freehand drawing the course begins with copy-books ruled in squares, and rises from geometrical forms to ornaments, which latter, however, are not based upon any definite style. The drawings on exhibition showed that the course of instruction is correct up to outline-ornament, although ugly forms were frequently to be seen among them. The specimens of figure-drawing were deficient. In linear drawing there were some very beautifully executed specimens of machinery. Of architecture

nothing of any importance was to be seen, if we except a few columns.

The "Normal School" exhibited some drawings of outline-ornaments (by female teachers) from bad copies, and shaded ornaments in crayon, hard in execution, after Bilordeaux, Julien, &c. With such examples it is impossible to educate taste. The same is true of the specimens from the "Pensionat de Bienfaisance pour Jeunes Filles" and the "Escola Regia das Mercieiras." The choice of examples in the latter school is fitted to debase rather than to elevate taste.

The "Association Commercial," whose seat is in Porto, and whose labors in behalf of the art-industry of the country are quite meritorious, exhibited a number of decorative polychrome ornaments (in plaster and wood), which were very successful in the imitation of Moorish forms. The pamphlets on the activity of the association were exhibited in the Hall of Industry, in frames under glass; and the reporter found it impossible to gain access to them.

AMERICA.

One of our most prominent art-scientists gave it as his opinion, at the close of the first World's Fair held in London in 1851, that the organization of art-instruction on the plan then proposed by England would be easiest of achievement, and would work to best advantage, in a country in which no old art-traditions are to be overcome, and which is in possession of the freest institutions, or, in other words, in the North-American Free States.[1] This sentence certainly contains a profound truth. But it may still be questioned, whether, under existing circumstances, an undertaking looking to such a result could meet with success for the present. As long as America is in her development, as long as the material aims of life are the only concern of her people, and as long as all the energies of the country are devoted to these aims, there can be no thought of ideal aspirations. And, whenever any thing of the kind is proposed, the attempt is limited to the continuation of traditions brought over from Europe. But these traditions are more likely to wither, than to flourish, in so strange an atmosphere. The productions of America in art, and especially in sculpture, are of European origin. Industry is bent upon usefulness, rather than upon artistic beauty; and individuality of taste is as yet out of the question. The leading cities of Europe will have to satisfy the wants of luxury in America for some time to come.

Architecture might perhaps be expected to develop an independent character before any of the other arts; but even in this department only European motives are to be seen; and, as there is no lack of means, these motives are frequently used as a pompous decoration of the most daring constructions. The photographs

[1] The passage here alluded to will be found in Semper's "Propositions." (See note, p. 35.) — *Transl.*

from Chicago, Cincinnati, and Philadelphia furnished characteristic specimens.

Taste can only be educated by means of well-organized museums and thorough instruction in art in the schools; but in both these particulars America is still upon the lowest stage. Speaking of schools especially, it must indeed be conceded that their importance is everywhere fully recognized, and that the amplest means are at the command of education. Specialists awarded high praise to the American schoolhouse at the Exhibition; the aids for teaching in the United States may be called models of their kind: but this is not all. The first condition in education is the teacher, and there is a want of these everywhere in America; not to speak of the fact, that there is as yet no system in relation to the categories of schools, and that each State, or perhaps even each city, has a different arrangement, which fact is also detrimental to a healthy development of educational matters. It can readily be perceived, therefore, why it has been impossible so far to establish High Schools (Universities) of the character of those in Europe.

But, in spite of these less favorable auspices, numerous demands have been made, especially of late, for the introduction of drawing into the schools, and with the same aims which are now recognized in Europe. In the more prominent cities, drawing is already practiced, and the results were to be seen at the World's Fair. It was hardly to be expected, in view of the circumstances just indicated, that these results should be of much importance, even if the originals and the method in use were the best; but it is in these particulars more especially that nearly every thing is still left to be desired. Thus drawing is taught in many schools by teachers who have no special knowledge of the subject themselves, while the Berlin copies (by Hermes) are used as examples. Now and then special drawing-teachers are indeed employed in some of the larger cities; but how can rational instruction be looked for, when most of these teachers are in charge of far too great a number of pupils? A report from Toledo (Ohio), for instance, states that one general teacher of drawing is charged with the care of seventy-four school-rooms! The method employed could not be learned from the specimens exhibited by these schools.

The same is true of the Grammar Schools of New York, in which only landscapes, animals, flowers, &c., are drawn. The attempt to delineate geometrical bodies from nature is made only occasionally, and, in view of the inefficient preparation of the pupils, showed but little success. Some of the higher schools in New York exhibited framed drawings (by pupils of from twelve to fifteen years) of vessels, utensils, &c., as well as copies of heads, landscapes, and animals (after Hermes and Julien), which were of somewhat better execution; but these specimens were treated rather as "pictures," than as illustrations of the course of instruction. A number of ornaments (from Bauer's examples), were so evenly copied that it appeared doubtful whether the different names with which the drawings were signed represented also different hands. In Chicago it is the same; map-drawing is carried on extensively here, but the main stress appears to be laid upon the colored borders surrounding the oceans. The regulations for drawing-instruction in this city (paragraph sixteen) emphasize only the importance and the value of the subject in its relation to the various branches of industry, but contain no definite programme for the several stages of instruction.

The Common Schools of Cincinnati exhibited the work of their scholars in truly magnificent bindings, one subject having been drawn by the whole class, so that the same volume frequently showed the same figure fifty to sixty times.[1] The drawings consisted mostly of small geometrical figures, stars, &c., executed tolerably evenly, and there was at least a certain principle in them. Among the work of the Teachers', Normal, and High Schools, on the contrary, sins against every thing like good taste were to be met with, that made one's hair stand on end.

As aids for instruction in drawing, Spencer's Drawing-books were exhibited in the schoolhouse, the subjects being represented on the left half of the paper, while the right is left blank for the copy by the pupil. The various stages proceed tolerably systematically from simple geometrical forms to the representation of vessels, utensils, &c.

To judge from the specimens exhibited, drawing is best taught

[1] This had been done by order of the authorities.

in Boston, and in Massachusetts generally.[1] In most of the schools, "The Drawing-Book of Standard Reproductions and Original Designs for Public Schools," by Walter Smith, has been introduced.[2] The work recommends itself, especially in its first parts for elementary instruction, advancing from a geometrical basis to simple ornaments; in the second part, a continuation of the ornament, there is a want of freshness in the treatment, and of definite style in the forms. This is followed up by heads, animals, flowers, and even whole human figures, arranged rather arbitrarily, and the whole executed in dry, cold outlines in pen-manner. Drawing in all the Public Schools is practiced according to this system, and the first exercises are generally executed upon slates. Further on studies are also made from plastic models, and the specimens exhibited showed very good results. Stereometric bodies, as well as vessels, vases, &c., are used for this purpose.[3]

"Picture-making" is again cultivated only in the Girls' Schools, in which the drawing-copies of Julien and of Hermes are exclusively in use.

Of the "Drawing Classes" there were drawings (from Smith's copies), which showed but moderate results; the work of the "Free Industrial Drawing Classes" of the State of Massachusetts, on the contrary, deserve full praise; there were to be found among them neatly executed heads (from casts, in two crayons) and good ornaments.

[1] The drawings sent from the Boston schools to Vienna exhibited but the first elementary fruits of Prof. Walter Smith's instruction to the Boston teachers. His text-books, containing examples for the use of pupils in the public schools, had not then been prepared, and consequently the instruction had to be given by the regular teachers entirely from the blackboard. Since the introduction of Prof. Smith's text-books into the schools, a great advance has taken place in all grades. — *Transl.*

[2] The author is in error in supposing that Prof. Smith's "Drawing Book of Standard Reproductions and Original Designs" had been extensively introduced, or was intended for public schools generally. This work was only designed to furnish examples for first practice in High Schools, Evening Classes, &c.; and in the absence of all suitable copies with which to begin drawing in such schools and classes, Prof. Smith reproduced several of the standard English examples of outline copies, in connection with some designs of his own, to meet the emergency. — *Transl.*

[3] The models were also exhibited.

The specimens having special reference to art-instruction, which were exhibited by other countries, were too unimportant and insignificant to make it necessary for the reporter to mention them in detail. The badly drawn (French) flowers, and some heads from Berlin copies, exhibited by a school in Athens as evidences of modern art-instruction in Greece, the landscapes (Calame) from Constantinople, the faulty copies of heads (after Julien) sent by the Technical School at Cairo, only served to make evident the fact that the education of taste is quite neglected in these parts of the world.

The eye was especially pained by seeing these weakly productions in the Greek section, directly alongside of the classical fragments of the Acropolis. These venerable remnants of art at the World's Fair, surrounded by the modern efforts and struggles, which manifest themselves in all departments of science and of art, were a sad illustration of the vanity of earthly glory. But their immortal beauty made them capable at the same time of serving as noble examples, continually admonishing us TO STRIVE FOR THE HIGHEST IN ALL THINGS.

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